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CHANGING CONCEPTS OF NUTRITION

CHAIRMAN'S ADDRESS

JAMES S. McLESTER, M.D.

BIRMINGHAM, ALA.

The day was when, in order properly to nourish the sick person, the physician told him what he must not eat; now, he is told what he must eat. This changing concept of nutrition marks a great advance in clinical medicine.

Until a decade ago, nutrition was the stepchild of medicine. True, for generations this science has been constantly advanced by a long line of brilliant investigators from Lavoisler to Graham Lusk, but physicians have been slow to give this knowledge practical application. This lack of interest was due in no small measure, I believe, to the semicharlatanism and wild faddism which have always flourished in this field and which have led many conservative physicians to give it a wide berth. Now a reversal of feeling has taken place. The great discoveries of recent years have excited the interest of every one, laymen and physicians alike, and today medical men are keenly alive to the vastly important part which nutrition plays in the prevention and treatment of disease; a radical change in the conception of the nutritive needs of the sick person has come about. This change is explained, I believe, by the order in which, in the evolution of modern medicine, the basic sciences have developed, cellular pathology coming early and present-day physiology late. Formerly, in planning the patient's food, physicians thought solely in terms of the local pathologic condition, of the harm they might do some impaired organ; now they think chiefly in terms of general physiology, of the good they can do the patient as a whole. This transition is signally characteristic of modern thought in nutrition.

All of this was foreshadowed twenty-five years ago by a complete about face in the treatment of typhoid. As an intern I saw the soldiers ill with this disease who returned in large numbers from the Spanish-American War, and two things stand forth in my memory: the miserably small amounts of food that were given these patients, and their desperately ill state. Today one sees a different typhoid. Now the patient is seldom very ill; the carphalogy and subsultus tendinum of those earlier days is a thing of the past, as is the muttering delirium, the distressing abdominal distention and the so-called toxemia, all because Warren Coleman demonstrated that the patient with typhoid must be adequately nourished. No longer do physicians think chiefly of the pathologic changes in the small intestine but rather of the nutrition of the patient as a whole. Today he is given much more abundant food of relatively wide variety, and as a rule he gets well.

Witness the change that has come about in the treatment of gastric ulcer. The method that long prevailed was the semistarvation plan of von Leube, until finally Lenhartz showed that the cure of almost anything is made more difficult by starvation and pointed out the fallacy of such rigid food restriction. The regimen which he instituted and which was revised for the American stomach by Sippy is of value not merely because the more abundant food has a direct influence on the stomach but also because it keeps the patient in something like nutritive equilibrium. It promotes repair.

A grievous error of the past was the dietary limitation imposed on the patient with Bright's disease. In the treatment of all forms of nephritis the physician had in mind but one object, that of sparing the kidney, and reasoned that this could best be accomplished by drastic restriction of the protein intake. Because of limited vision the effects on the kidney of the degradation products of protein metabolism were feared, and in the interest in the local changes the patient himself was forgotten. Physicians entirely overlooked the fact that food proteins which are used for replacement purposes are not degraded to their end products and therefore can in no wise increase the burden on the kidney and, what is still more important, failed to realize that protein loss plus protein starvation must of necessity lead to a depletion of body proteins and thus eventually to a state of chronic inanition, which in turn retards all recovery.

If recovery is to be promoted, protein loss must be made good. The truth of this was first seen in the striking results obtained by Epstein when his nephrosis patients, with their heavy albuminuria, were fed large amounts of protein. Later this became still more evident through the observations of Van Slyke and his associates, who found that if the plasma protein deficit of glomerular nephritis is allowed to persist the patients fare badly, while, on the other hand, if the albumin loss is made good and the blood proteins are maintained at approximately the normal level, the patients as a rule go on to complete recovery. The accuracy of these observations has been abundantly attested by McCann in the excellent results achieved when he prescribed large amounts of protein for patients with glomerular nephritis. In some of McCann's patients the improvement was graphic. From such experiences it has been learned not only that rigid protein restriction in nephritis is bad but that if the patient is to be given the best opportunity for recovery he must be adequately nourished, and that of paramount importance is a

Read before the Section on Miscellaneous Topics, Session on Nutrition, at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 14, 1934.

liberal, sometimes a large, intake of protein. Here, too, the medical profession has advanced from a consideration of local pathologic change to one of general physiologic function.

In the same category until recently was the patient with vascular hypertension. He was told that he must eat no meat, no eggs. I have no doubt that the resulting protein starvation imposed an additional handicap on many persons already suffering from heavy disabilities and that much unnecessary semi-invalidism resulted. From a better understanding of nutrition it is now known that instead of this one-sided diet the person so handicapped must have a well balanced ration, never excessive, but never lacking in any essential, such a diet as is best calculated to preserve the greatest degree of vigor for the longest period of years.

Even more recent is the change that has come about in the conception of the nutritive needs of the patient with diabetes. The earlier understanding of this disease was that it was merely a failure of carbohydrate utilization. It was thought of only in terms of carbohydrate metabolism and the patient's food was restricted accordingly. Then came insulin. This agent has helped enormously, and while it has not solved the riddle of diabetes it has pointed the way to one important truth; that is, that the entire animal economy, not merely a single metabolic fault, must be considered. In providing nourishment for the diabetic patient it has been learned that he must get adequate amounts of every class of food, particularly of carbohydrate, the very foodstuff that was formerly restricted with such rigor.

Even in tuberculosis, views have materially changed. The ability of the patient to store fat was once thought to be the best criterion of progress, and that to bring about a condition of obesity or near obesity was the acme of good treatment. Now it is known that such a condition imposes a real handicap. It is evident from a nutritional standpoint that the greatest good for the tuberculous patient can be accomplished by a diet that is liberal but not too liberal; that is, a diet that keeps him in a state of nutritive equilibrium and approximately at his ideal weight. This, infinitely more than a condition of overweight, encourages recovery.

In chronic arthritis every variation of dietary restriction has been played on, and almost everything, at one time or another, has come under the ban. Proteins were restricted because they increase the production of uric acid; fruits and tomatoes were forbidden, strange to say, because they contain acids; and sugars and starches were limited because a few students of arthritis have concluded that lowered dextrose tolerance is a salient feature of these disorders. No satisfactory clinical evidence, however, has yet been presented to show that such restrictions, even of carbohydrate, influence the course of arthritis. The feeling is gaining ground that, except for reduction of weight in the obese, most can be accomplished in a nutritive way for arthritic patients by warning against one-sided diets and by prescribing a fairly liberal ration which carries all nutritive essentials. It is coming to be realized that these unfortunate patients are destined to be sick a long time and that they should be permitted a ration which best insures against nutritive failure.

Even the nutritive needs of infancy and early childhood are today viewed with a much broader understanding. Those practitioners who were taught the elaborate milk formulas of thirty years ago marvel at the wide variety of foods given infants today, spinach, carrots, beets, tomatoes, scraped beef, even sweet potatoes. They take almost anything and thrive.

I am tempted to hazard the prediction that this shift in the concepts of nutrition will extend to the obstetric practice of the future. That school of thought which restricts the protein quota of the pregnant woman's ration for fear of damaging the liver and thus producing eclampsia is, I believe, in error. And, too, those obstetricians who materially restrict all food in pregnancy in the effort to limit the size of the offspring and thus make labor easier are likewise, I fear, in error. During pregnancy the woman needs, more than at any other period of her life, an abundant diet which provides in adequate amounts all necessary food factors, not only carbohydrate and fat but proteins, vitamins and minerals as well. To deny her this, even in small degree, is to court disaster.

In conclusion I would call attention to the fact that these changing concepts of nutrition are not the result of vacillation or of an uncertain drift of opinion. Far from it. They express the broader understanding of man's nutritive needs that has come with the discoveries of recent years and represent the well considered application of knowlege gained, little by little, from painstaking research and careful clinical observation. This is the way of progress.

930 South Twentieth Street.

TREATMENT OF EMPHYSEMA

JONATHAN MEAKINS, M.D.
AND
RONALD V. CHRISTIE, M.D.
MONTREAL

Chronic pulmonary emphysema is the permanent overdistention of the alveoli and the decreased elasticity of the pulmonary tissues. It is not our purpose to discuss the different factors that may produce emphysema but rather how it interferes with respiratory and circulatory function and the means whereby these deleterious effects may be overcome.

Whatever the etiologic factor, the cause of the impairment of function in emphysema evidently lies in a loss of pulmonary elasticity. As this loss of elasticity progresses, the lungs can no longer resist the traction of the chest wall and they distend until a position approaching full inspiration is reached. The lung can now no longer deflate during expiration by the normal process of passive elastic recoil but has to be actively compressed by the extrinsic muscles of expiration. In other words, the lung has to be pulled on to make it distend and then has to be actually squeezed to make it deflate. This is a highly unnatural form of respiration and one that leads to a general disruption of the mechanics of pulmonary ventilation and circulation. It is difficult to dissociate the respiratory from the circulatory readjustments since they are interactive, but for the sake of clarity this will be attempted.

RESPIRATORY READJUSTMENTS IN EMPHYSEMA

With the loss of elasticity the lungs distend, following the traction of the chest wall and leading to a marked increase in the volume of the functional residual

From the Department of Medicine, McGill University Clinic, Royal Victoria Hospital.
Read before the Section on Practice of Medicine at the Eighty-Fifth Annual Session of the American Medical Association, Cleveland, June 13, 1934.

air. This disturbs the ratio of functional residual air to the total capacity. In normal people the former is between 35 and 40 per cent of the latter, but in emphysema it may be as great as from 70 to 80 per cent. As a result of the same causes there is a more or less pronounced reduction in the vital capacity, and their influence is also reflected in the type of breathing. At rest it may be quite similar to the normal but on exertion the volume cannot be properly increased and therefore it becomes rapid and relatively shallow. In fact, in severe cases this is present at rest. In other words, the resting tidal air and the vital capacity may approximate equality.

Normally, expiration is a passive act accomplished by the elastic recoil of the lungs. With loss of pulmonary elasticity the lung will no longer recoil but has to be compressed by an active expiratory effort with the generation of a positive intrapleural pressure, to which the thoracic cage in a man is wholly unsuited. The diaphragm is a muscle of inspiration and is not constructed to resist any such increase in intrathoracic pressure, which is bound to displace it downward, with subsequent impairment of tone and range of contractility. This downward displacement of the diaphragm can be prevented only by contracting the muscles of the abdominal wall, since a sufficient increase in the intra-abdominal pressure will support the dome of the diaphragm. Unfortunately in emphysema the abdomen is apt to be relaxed and pendulous and this excessory aid to expiration is not present. The importance of this state of affairs has not been sufficiently appreciated and must be forcibly emphasized.

In addition, on account of the overexpanded and inelastic condition of the lungs, the diaphragm at the

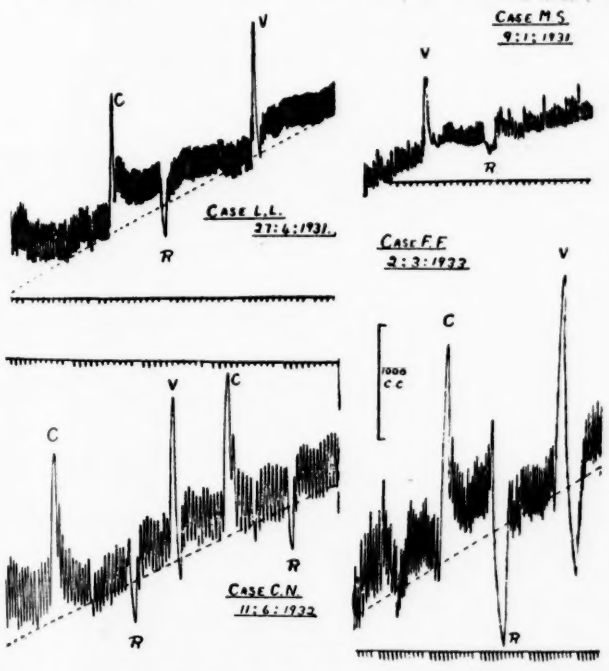


Chart 1.—The vital capacity in four cases of emphysema, showing the overstretching on deep inspiration and the difference between the volume of reserve aid taken alone and that taken at the end of a test for vital capacity. *C*, complemental air; *R*, reserve air; *V*, vital capacity. The irregularity in the resting respiratory level is also well shown.

end of expiration cannot rise to its normal position, as the contents of the thorax are too voluminous to allow it to do so.

Such profound disturbances in respiratory function, besides making the patient ever conscious that breathing is a difficult and fatiguing procedure, also actually leads to an interference with the primary purpose of respiration; namely, an adequate gaseous exchange between the blood and the alveolar air. With the loss of elasticity there is a change in the distribution of ventilation throughout the lung. No longer are the alveoli equally ventilated, but the superficial, distended, ischemic and relatively functionless alveoli are overventilated at the expense of the deeper and more healthy

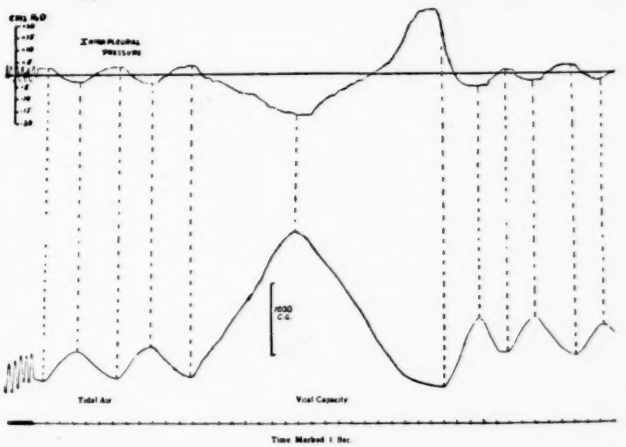


Chart 2.—Pulmonary distensibility and elasticity. Minimal tuberculous lesion at right apex. Tracing to show that the point of maximum distention corresponds closely to the time when the intrapleural pressure is most negative.

alveoli, which are underventilated. In all cases of emphysema recognizable clinically, there is a definite reduction in oxygen saturation of the arterial blood. This fortunately develops slowly and therefore allows the body to become accommodated to the anoxic change of its internal environment. This is reflected first in the comparative comfort of many patients with a reduced arterial oxygen saturation, which if produced suddenly would give rise to the most acute dyspnea, and, secondly, in the increase of hemoglobin and polycythemia that develops. These disturbances explain the cyanosis, which is a frequent occurrence in this condition. There is also usually an increase in the carbon dioxide of the arterial blood, which is compensated for by an increase in the bicarbonate reserve. The respiratory distress and the impairment of hemorespiratory exchange are proportionate to each other.

CIRCULATORY READJUSTMENTS IN EMPHYSEMA

Disturbances of the circulation have always been considered important complications of emphysema. They can properly be considered in two phases; namely, increased venous pressure and right heart failure, both of which are directly due to the reduced elasticity of the lungs and the increase in intrapleural pressure. The influence of these two conditions on the circulation cannot be separated, as they are themselves interdependent. In normal subjects there is a small but definite pressure gradient between the vena cavae and the right auricle. This is largely governed by the negative intrathoracic or intrapleural pressure. When this becomes positive over a greater part of the time, an increase in the venous pressure takes place during this period. As the degree of emphysema and therefore the increase in intrapleural pressure becomes progressively more pronounced, so will there be a rise in venous pressure, and this in turn will tend to progressive congestive failure. The progress is slow but inevitable.

The heart in emphysema exhibits hypertrophy of the right ventricle *pari passu* with the pulmonary lesion. This would strongly point to an increase in pressure in the pulmonary arteries. It is conceivable that this might be brought about either by an intravascular resistance due to the anatomic changes in the lung or to diminution of the so-called pumping action of the lungs, or to an actual compression of the pulmonary circulation during the period of increased intrathoracic pressure. The first two are problematic, as they have been surmised but not proved; the last has been demonstrated.

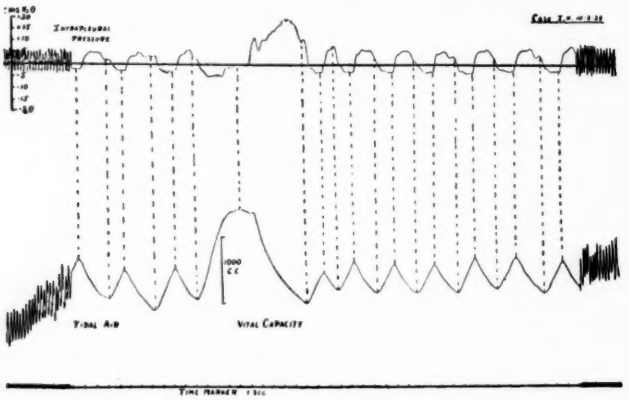


Chart 3.—The intrapleural pressure in emphysema. Initial 40 cc. pneumothorax on the right side. Pressure fluctuates around that of the atmosphere. With deep inspiration the negative intrapleural pressure is held rather than increased, and when inspiration is complete pressure returns to atmospheric pressure; to compare with normal see Christie and McIntosh (*J. Clin. Investigation* **13**: 279 [March] 1934, figure 5).

It has also been found that circulatory failure, like the disturbances of hemorespiratory exchange, is parallel to the increase of intrapleural pressure.

The patient with advanced emphysema is indeed in an unfortunate position. The muscles of inspiration are already in the inspiratory position when inspiration commences. A greater amount of work is required to distend the lung, and a large proportion of the air that is inspired is wasted on the peripheral functionless alveoli. Even after this wasted effort, the lungs cannot passively relax except as the result of an unnatural expiratory effort. As respiratory compensation fails, imperfect aeration of the blood occurs and a vicious circle is established, with increasing demands for hyperventilation and decreasing ability to ventilate.

TREATMENT

The anatomic state of the emphysematous lung is beyond repair. Its treatment, therefore, is restricted to the amelioration of the resulting functional defects.

The difficulties of expiration and the paradoxical movement of the diaphragm can best be relieved by increasing the intra-abdominal pressure through the wearing of a tight abdominal binder.[1] This raises the diaphragm toward its normal expiratory position and at the same time supports it in this position during the active muscular expiration. This procedure undoubtedly gives these patients symptomatic relief of their consciousness of respiration and also seems to save them considerable respiratory fatigue. There is some difference of opinion as to how this is brought about. In the case of pregnancy reported by Gordon in which he recorded the intrapleural pressure, he found it to be definitely and progressively increased. Alexander, on the other hand, states that in a few cases it is decreased, in fact, becomes negative during expiration. We have been hesitant to make a thorough study of this point as we considered that the dangers of pulmonary rupture were too great. Alexander also reports, giving actual amounts, pronounced increases in the vital capacity. The increase averaged 39 per cent. The largest was 77 per cent (1,800 cc. without to 3,200 cc. within the belt). We have not been able to corroborate this; in fact, our tracings of the vital capacity, reserve and complementary air in subjects trained in this form of respiratory gymnastics do not show any conspicuous or constant differences in these measurements with or without the belt.

It has been mentioned that in emphysema there is a reduced oxygen saturation of the arterial blood. This gives the patients the deep bluish cyanosis so characteristic of the disease. It varies greatly from time to time. Temporary relief can be afforded by the inhalation of air enriched with oxygen. It is impossible to carry this out during the daily activities, but disturbed sleep is often distressing. This can be greatly relieved by oxygen therapy for an hour or so before going to sleep. The duration of the symptomatic improvement is surprising.

Cardiac failure is to be expected in progressive cases. The usual measures for the conservation of energy should be instituted for its prevention. In the acute attacks, free venesection should be done promptly. For the rest, the treatment should be such as would be indicated in cardiac failure due to other causes.

If it is true that the intrapleural pressure is increased by an abdominal belt, its use in time may aggravate the embarrassment of the pulmonary circulation. This may explain how some patients find it impossible to tolerate the belt even though it may give them some respiratory relief.

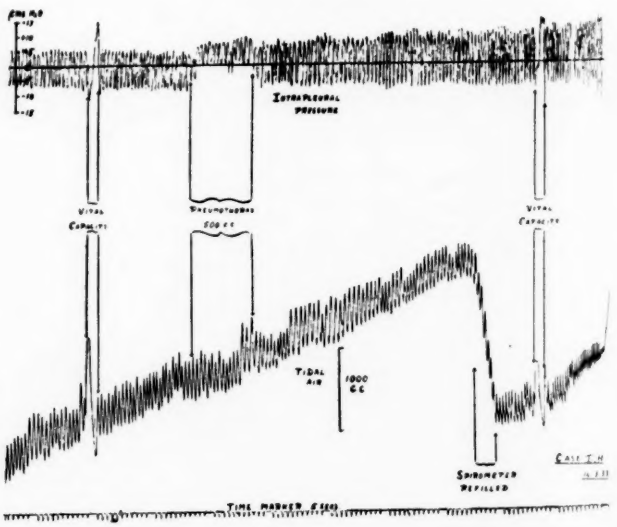


Chart 4.—Spontaneous pneumothorax in emphysema. Lung evidently punctured while pneumothorax was being given, with formation of valvular bronchopleural opening. No immediate change in pleural pressure or tidal air but progressive diminution in the latter and increase in the expiratory pressure can be observed until at end of tracing a pressure fluctuation of +13.2—9.0 only yielded a tidal air of 60 cc. At this point 2,100 cc. of air was removed from the pleural cavity, with complete relief of symptoms.

Lastly, any condition such as chronic bronchitis or asthma, which tends to increase the distention of the lungs, should be treated. The treatment of cough is the treatment of its cause, but usually an abdominal

1. The use of a suitable binder in such pulmonary conditions was suggested by three separate workers, Christie at the meeting of the American Society for Clinical Investigation, May 8, 1933, and Alexander and Gordon at the meeting of the Association of American Physicians, May 9-11, 1933.

binder will relieve the distress that so often accompanies coughing in these cases. Most cases of emphysema present some asthmatic tendency and ephedrine is always worth a trial.

ABSTRACT OF DISCUSSION

DR. S. ADOLPHUS KNOPF, New York: The idea of an abdominal bandage for sufferers from emphysemia is excellent and I am inclined to believe that it should be of equal advantage for asthmatic patients. There is, however, an exercise which I might call a physiologic adjuvant in the treatment of emphysema. It is equally helpful in asthmatic attacks. It consists of supinating the arm and forearm and pressing them against the sides of the chest along the axillary line. As is well known, it is expiration that is so difficult for the emphysematous and asthmatic patient. Of the 1,200 cc. of tidal air and 500 cc. of residual air, quite a quantity can be expelled by this pressure movement and thus relieve the most distressing symptoms of empysema and asthma. If in addition to this, the patient uses diaphragmatic respiration rather than costal and is careful with his diet, he will avoid accumulations of gas in his abdominal region, and will be rendered more comfortable. The improvement of the portal circulation by diaphragmatic respiration is a decided advantage to this class of patient. Of course, he must not resort to this exercise of supinating the arms to the extent of getting overtired and must avoid all strenuous physical exertion. This precaution is one to which all emphysematous and asthmatic patients must adhere.

INTENSIVE LIVER EXTRACT THERAPY OF SPRUE

C. P. RHOADS, M.D.
AND
D. K. MILLER, M.D.
NEW YORK

The effective treatment of sprue is a problem of considerable practical importance in spite of the fact that therapeutic methods which are occasionally successful have been at hand for many years. One serious difficulty lies in the fact that different individuals, presenting an apparently identical clinical picture, manifest wide variations in the amount of specific therapy that they require to effect clinical cure. Moreover, the available information regarding the treatment of sprue is confusing, since the various therapeutic procedures in use appear to be so unrelated and the clinical results obtained from them have been so inconstant that it has seemed impossible to draw up a general rule of treatment that would be applicable to all cases.

More detailed analysis of the existing therapeutic methods in the light of present knowledge makes it clear that a general rule of treatment can be formulated and, furthermore, that from the therapeutic results an understanding of the etiologic mechanism of the disease syndrome may be obtained. Such an understanding is of importance in treatment, since without it various therapeutic procedures seem to be purely empirical; and when doubt as to the rationale of a procedure exists the determination to carry it through to the desired end is frequently wanting.

Prior to 1927 the treatment of sprue was almost entirely dietary. The accepted policy was to restrict the intake of fat and of carbohydrate and to depend on different single and apparently dissimilar food materials as the principal sources of nutrition. Thus in turn liver diets, meat diets, milk diets, banana diets and strawberry diets were all recommended and were frequently effective when employed early in the course of the disease. Complete and permanent cure occasionally followed such treatment but early and severe exacerbations were the rule and a stage of the disease was eventually attained at which dietary measures were ineffective.

Baumgartner [1] showed that the feeding of these diets was specific in promoting hematopoiesis. He applied to sprue anemia a procedure devised by Minot and his associates [2] for evaluating the effectiveness of specific therapy in pernicious anemia. The method was based on the fact that the percentage of reticulocytes in the circulating blood increased very markedly at the onset of a true remission. Reticulocyte rises were induced by feeding to individuals with sprue anemia certain diets which were known to be effective in the treatment of that disease but which did not contain liver or other material known to be curative in pernicious anemia. This observation was evidence that some constituent of the diet was specifically required for hematopoiesis in sprue anemia and that this dietary constituent was not the liver fraction so effective in the treatment of pernicious anemia. This difference in the response to therapy was the more incomprehensible when the striking hematologic similarities between the two anemias were considered. Two problems were then at hand: first, to ascertain the presence of some common factor in the diets known to be effective in the cure of sprue and, second, to show the relationship of such a common factor to the substance effective in pernicious anemia, a disease that is symptomatically and hematologically similar to sprue.

A more detailed knowledge of nutrition makes it clear that the seemingly dissimilar diets do possess one factor in common; a relatively high content of water-soluble vitamin. Since this appears to be the only common factor, it seems probable that the effects obtained in the treatment of sprue by feeding these diets are due to the water-soluble vitamin which they contain. It is an established principle in the study of nutritional factors that, if a demonstrable physiologic effect can be induced by feeding any one of a variety of substances in which only one particular vitamin is common to all, the effect will occur only in the presence of a deficiency of that vitamin in the body of the test animal. Since several different diets are irregularly effective in the treatment of sprue and these diets contain only the water-soluble vitamin as a common factor, it seems probable that a lack of that vitamin exists in certain cases of the disease. Furthermore, the existence of such a lack suggests that it is perhaps causal; that is, that sprue is a disease due in some instances at least to a deficiency of some fraction of the water-soluble vitamin complex. Since dietary treatment is not always effective, however, it follows that in other instances one or more additional or complicating etiologic factors are involved. Studies of the factors concerned in the etiology of pernicious anemia, a disease similar in many respects to sprue, have given the clue to the nature of the complicating factors concerned in the etiology of the latter disease.

In 1925 Minot and Murphy [3] showed that whole liver was specifically effective in the cure of pernicious anemia. Bloomfield and Wyckoff [4] fed whole liver to

1. Baumgartner, E. A., and Case, C. E.: Clifton M. Bull. **16:** 183, 1930.
2. Minot, G. R.; Murphy, W. P., and Stetson, R. P.: Am. J. M. Sc. **175:** 581 (May) 1928.
3. Minot, G. R., and Murphy, W. P.: Treatment of Pernicious Anemia by Special Diet, J. A. M. A. **87:** 470 (Aug. 14) 1926.
4. Bloomfield, A. L., and Wyckoff, H. A.: California & West. Med. **27:** 659 (Nov.) 1927.

individuals suffering from sprue and in 1927 published an account of clinical cures resulting from such treatment. In the following year West [5] reported remissions following the treatment of sprue with that fraction of liver which had been shown by Cohn, Minot and their associates [6] to be effective in pernicious anemia. Liver extract, then, as well as diets rich in the water-soluble vitamin, may be therapeutically effective in sprue. To

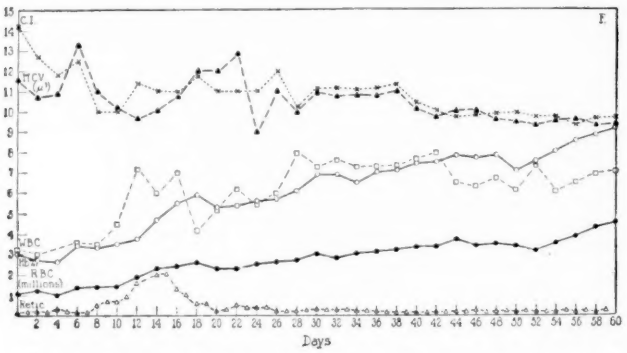


Chart 1.—Hematologic changes following the intramuscular injection of 10 cc. of liver extract daily. For five weeks previous to this, 2 cc. of the same material was administered daily by intramuscular injection without improvement.

establish the etiologic similarity between sprue and pernicious anemia, it remained only to prove that the water-soluble vitamin could induce remissions in the latter condition. Such an effect was suggested by the studies of Castle and his associates,[7] which showed that a dietary constituent contained in beef muscle was acted on by a substance present in normal gastric juice to produce a third substance potent in producing remissions in pernicious anemia. The gastric juice of patients with the disease was not effective in forming the hematopoietic principle by interaction with the dietary factor. Hence, a deficiency in the gastric secretion was clearly causative of pernicious anemia. Other investigators showed that the livers of patients with pernicious anemia who lacked adequate gastric secretion were devoid of the hematopoietic principle present in normal livers. It was apparent that the product of the interaction of a dietary factor and normal gastric secretion was stored in the liver, where it was available for clinical use as liver extract.

It appeared from these investigations that a dietary constituent as well as normal gastric secretion was required for hematopoiesis. In 1931 Castle and his associates [7d] pointed out that a disease similar to pernicious anemia should develop if there was an insufficient intake of the dietary constituent, a defect of the gastric juice or defective absorption of the product of the interaction of these factors. Sprue was similar to pernicious anemia and was due in some instances to lack of a diet rich in the water-soluble vitamin. Clearly, if the dietary factor involved in the causative mechanism of pernicious anemia could be shown to be the water-soluble vitamin, the link between pernicious anemia and sprue would be established.

The next step was to establish the dietary factor as being related to the water-soluble vitamin. Wills [8] described remissions induced in cases of tropical macrocytic anemia by feeding an extract of yeast, which was rich in that vitamin. Castle and Rhoads [9] observed similar responses resulting from the use of the same yeast extract in cases of sprue. This was confirmatory evidence that a relatively simple preparation rich in vitamin B complex was effective in that disease. An exactly similar effect was shown by Strauss and Castle [10] to occur if the same yeast extract was incubated with gastric juice and fed to patients with pernicious anemia. Reticulocyte rises and improvement of blood values occurred uniformly. Neither the yeast extract nor the gastric juice was effective alone. This indicates that the dietary factor, given as meat in the original experiments of Castle, was contained in a yeast extract rich in the water-soluble vitamin and that an interaction with gastric juice was required for it to be effective in hematopoiesis in pernicious anemia. Thus the only difference between certain cases of sprue and of pernicious anemia was that a substance rich in the water-soluble vitamin was therapeutically effective per se at least in certain cases of sprue, whereas it was effective in pernicious anemia only after it had been incubated with normal gastric juice. The dietary factor in the two conditions was the same. Simple dietary lack, while apparently causative in certain instances, was clearly not the only factor involved in the production of all cases of sprue.

Since symptomatic similarities between sprue and pernicious anemia exist, and since orally administered liver extract, a material effective in pernicious anemia, was occasionally effective in cases of sprue, which had failed to respond to diet alone, it seemed probable that the lack of a gastric secretory factor might contribute at least to the causative mechanism of sprue in the way in which it had been shown to be causative in pernicious anemia. The observation by Rhoads and Castle [11] of the similarity between the pathologic alterations of the bone marrow in the two conditions is further evidence that they possess some etiologic factor in common. The study by Castle and Rhoads [9] of a large number of cases of sprue in Puerto Rico showed that the gastric dysfunction obtaining in per-

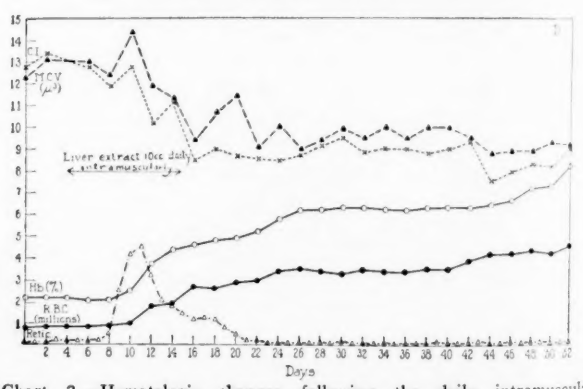


Chart 2.—Hematologic changes following the daily intramuscular injection of 10 cc. of liver extract.

nicious anemia did play a part in the production of symptoms in certain instances. This was clear from the fact that in some cases the addition of normal gastric juice to substances rich in the water-soluble accessory food factor was required before a remission

5. West, Randolph: Puerto Rico Rev. Pub. Health & Trop. Med. **4:** 219 (Nov.) 1928.
6. Cohn, E. J.; Minot, G. R.; Alles, G. A., and Salter, W. T.: J. Biol. Chem. **77:** 325 (May) 1928.
7. (*a*) Castle, W. B.: Am. J. M. Sc. **178:** 748 (Dec.) 1929. (*b*) Castle, W. B., and Townsend, W. C., ibid. **178:** 764 (Dec.) 1929. (*c*) Castle, W. B.; Townsend, W. C., and Heath, C. W., ibid. **180:** 305 (Sept.) 1930. (*d*) Castle, W. B.; Heath, C. W., and Strauss, M. B. ibid. **182:** 741 (Dec.) 1931.
8. Wills, L.: Brit. M. J. **1:** 1059 (June 20) 1931.
9. Castle, W. B., and Rhoads, C. P.: Lancet **1:** 1198 (June 4) 1932.
10. Strauss, M. B., and Castle, W. B.: Lancet **2:** 111 (July 16) 1932.
11. Rhoads, C. P., and Castle, W. B.: Am. J. Path. **9:** 813 (supp.) 1933.

could be effected. This was evidence that there was a lack of anti-pernicious anemia factor in the gastric juice of the patients tested. In the same publication it was reported that in other instances remissions could not be induced even though both the dietary factor and the gastric factor were supplied to the intestinal tract. This was also the case when liver extract, a material supposed to represent the product of the interaction of those two factors, was given by mouth, although when a much smaller amount of liver extract was administered parenterally, maximum responses were obtained. As suggested by Castle,[12] for pernicious anemia this fact can indicate only that the effective material either was not absorbed from the intestinal tract or was broken down in it. The former hypothesis was considered to be the most probable, since sprue may result from surgical intervention with the absorbing surface of the bowel; moreover, sprue is frequently associated with secondary deficiencies of such dietary constituents as calcium and iron, elements not likely to be destroyed in the intestinal tract.

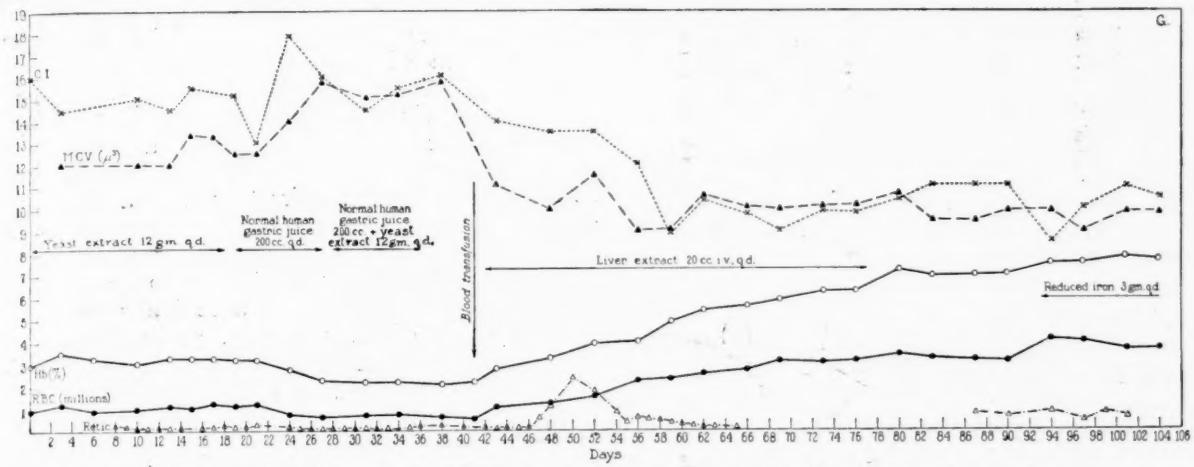


Chart 3.—Hematologic changes following the daily intravenous administration of 20 cc. of liver extract.

It appears, then, that clinical sprue may arise in three ways: by dietary lack, by lack of the gastric enzyme that is absent in pernicious anemia, or by inability to absorb the product of the interaction of the first two. Clearly, any one of the three factors may be causative or any combination of the three may exist. Furthermore, differences in the relative importance of the part played by each of the three might account for variations in the clinical manifestations.

In view of the facts presented, it becomes clear that the desideratum in the treatment of sprue is to place the product of the interaction of the dietary factor and the gastric enzyme, that is, liver extract, as near to the site of utilization as possible in as large amounts as may be required. Our purpose in this communication is to indicate what parenteral route is most effective and what amounts of material are required to induce remissions in the most refractory cases. If methods effective in those cases were to be applied as a general rule in the treatment of all, therapeusis would become simplified and the period of the patient's incapacity would be materially reduced.

REPORT OF CASES

CASE 1.—*History.*—M. F., an American woman, aged 47, who had resided for twenty years in Puerto Rico, had had sprue for four years with glossitis, stomatitis, diarrhea and loss of weight. For five weeks before entry to the hospital the patient had received daily intramuscular injections of liver extract, the amount given at each injection being that derived from 10 Gm. of whole liver. At the onset of the disease the patient weighed 215 pounds (97.5 Kg.); the weight on admission was 92 pounds (41.7 Kg.).

Examination.—The patient was emaciated and semicomatose, with incontinence of urine and feces. The mucous membranes were very pale and had a definite icteric tint. The tongue was smooth. The abdomen was tympanitic, and audible peristalsis was present. There was pitting edema of both legs.

Gastric analysis showed free hydrochloric acid only after the injection of histamine. Results of the laboratory examination were: red blood cells, 1,130,000; hemoglobin, 30 per cent; white blood cells, 5,250; color index, 1.42; mean corpuscular volume, 115 cubic microns; reticulocytes, 1.0 per cent.

Course in Hospital.—Vomiting occurred after every feeding. There were five or six large yellow stools a day. Intramuscular injections of solution liver extract-Lilly were given daily for two weeks, each being of 10 cc., an amount derived from 50 Gm. of whole liver. On the sixth day there was a reticulocyte count of 22 per cent. The diarrhea and vomiting disappeared. The injections were continued twice a week until discharge. The patient gained rapidly in weight and left the hospital six weeks after admission, with an erythrocyte count of 3,710,000 and hemoglobin 75 per cent. One year later the patient's weight was 187 pounds (84.8 Kg.) and she was symptom free. She has received the same amount of liver extract twice a month since her discharge.

CASE 2.—*History.*—R. D., an American woman, aged 50, who had lived for twenty-one years in southern China, entered the hospital complaining of diarrhea of seven years' duration, her illness following an afebrile attack of diarrhea lasting six weeks. Subsequent attacks occurred during the first year. Early in the second year soreness of the tongue and mouth developed and the diarrhea was persistent. Relief of symptoms followed a diet of sour milk and liver. During the fourth year from the onset of symptoms, improvement did not follow the same treatment and the patient returned to this country, where she was free from symptoms for six months. The period of relief was again followed by severe abdominal distress and diarrhea. About six weeks before entry, weakness, shortness of breath and pallor appeared, and she was confined to bed. Three vials of liver extract-Lilly were administered orally each day for three months without relief of symptoms.

Examination.—The patient was markedly emaciated and appeared extremely ill. The skin and mucous membranes had a lemon-yellow tint and were pale. There was atrophy of the papillae along the borders of the tongue, with furrows over the dorsum. The abdomen was slightly distended and tympanitic. The spleen was palpable. There was pitting edema of both ankles. Gastric analysis showed free hydrochloric acid only after the injection of histamine. Laboratory examination showed: red blood cells, 820,000; hemoglobin, 22 per cent;

12. Castle, W. B.: Proc. Internat. Assemb. Interstate Post-Graduate M. A. N. A. **6**: 82, 1930.

color index, 1.34; mean corpuscular volume, 131 cubic microns; icterus index, 20; reticulocytes, 1 per cent.

Course in Hospital.—Daily intramuscular injections of solution liver extract-Lilly were given for two weeks. Each injection was of 10 cc., an amount derived from 50 Gm. of liver. On the sixth day after the first injection there was a reticulocyte rise of 42 per cent. The day after the first injection the patient had one formed bowel movement, although there had previously been five or six loose stools daily. The reticulocyte response was followed by a rise of the red count and hemoglobin values. The patient had no further diarrhea unless a longer period than two weeks elapsed between injections of liver extract. She was discharged seven weeks after entry with an erythrocyte count of 4,170,000 and a hemoglobin level of 73 per cent. For two years since discharge the patient's erythrocytes have been maintained at about 4,500,000 per cubic millimeter with treatment twice a month. She has been able to eat a normal diet and has had no diarrhea.

CASE 3.—*History.*—M. G., a Puerto Rican woman, aged 63, had had sprue for eighteen years before entry. For five years, soreness of the mouth and tongue had been present. The patient had lost from 30 to 40 pounds (13.6 to 18 Kg.) and had noticed extreme weakness during the two months preceding her admission.

Examination.—The patient was emaciated and markedly pale. The tongue was smooth. The abdomen was moderately distended and peristalsis was audible. The spleen was just palpable. There was pitting edema of both legs.

Gastric analysis showed free hydrochloric acid only after the injection of histamine. Laboratory examination showed: red blood cells, 1,000,000; hemoglobin, 30 per cent; white blood cells, 2,250; mean corpuscular volume, 120 cubic microns; color index, 1.50.

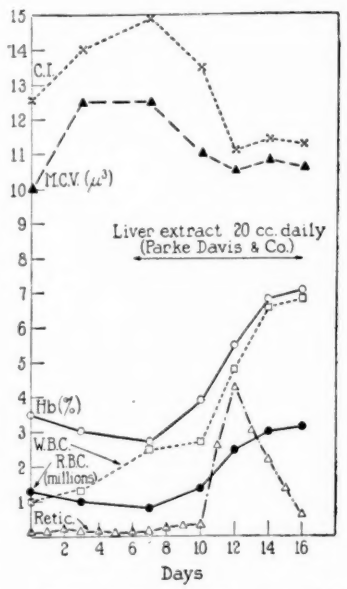


Chart 4.—Hematologic changes following the daily intravenous administration of 20 cc. of liver extract.

Course in Hospital.—The patient was given 12 Gm. of a commercial yeast extract daily for twenty days, without relief of anemia or diarrhea. During the following ten days 200 cc. of normal human gastric juice was given daily without any therapeutic response. During the succeeding ten days human gastric juice and Vegex in the aforementioned amounts were incubated together and fed daily. This digest is known to be effective in pernicious anemia. There was no improvement in blood values or amelioration of the diarrhea. Since the patient's condition was serious, 20 cc. of Parke, Davis & Co. liver extract prepared for intravenous use was administered intravenously each day. On the eighth day after the institution of treatment the reticulocytes were 27 per cent. This was followed by improvement in the blood values and cessation of the diarrhea. The daily treatment was continued for two weeks and then one injection was given twice weekly until discharge three and a half months after entry. At the time of discharge the erythrocyte count was 4,000,000 and the hemoglobin 80 per cent. Treatment has been continued at intervals of two weeks for one year, and during that time the patient has been symptom free and has maintained normal blood levels.

CASE 4.—L. N., an American woman, aged 45, who had resided in China for twenty-one years, had suffered from sprue for fifteen years. The presenting symptoms were stomatitis, glossitis, proctitis and diarrhea. Nine years before admission a remission had followed the taking of a high protein, low fat and low carbohydrate diet. For three years before admission, nausea and vomiting with marked loss of weight had been present. For six months the patient had been in bed and able to retain only milk. During the three months immediately preceding admission she had received intramuscular injections twice a week of 2 cc. of liver extract, an amount derived from 10 Gm. of whole liver. No improvement had resulted from this therapy.

Examination.—The patient was markedly emaciated. There was pallor and a faint yellow color of the skin and mucous membranes. The tongue showed atrophy of the papillae. There was edema of both legs.

Laboratory examination showed: red blood cells, 860,000; hemoglobin, 27 per cent; white blood cells, 2,500; mean corpuscular volume, 136 cubic microns; color index, 1.54. Gastric analysis showed free hydrochloric acid only after the injection of histamine.

Course in Hospital.—The patient was given 20 cc. of liver extract-Parke, Davis & Co. intravenously each day during her stay in the hospital. On the seventh day of treatment the reticulocytes had risen to 43.2 per cent. This was followed by an increase in the number of erythrocytes and of the hemoglobin content. Diarrhea did not occur after the injections of liver extract were begun. The patient's appetite improved and she was discharged three weeks after entry with an erythrocyte count of 3,040,000 and hemoglobin of 67 per cent.

COMMENT

The four cases of sprue reported all failed to respond to some form of specific treatment but did finally improve under intensive parenteral therapy. They were the only ones in a series of twelve cases of sprue similarly studied and treated in which a clear-cut comparison between different methods of treatment could be drawn. In all four refractory cases a steady, progressive increase in the severity of the disease had taken place in spite of supposedly adequate therapy employing agents that were known to be specifically effective. When moribund, all were finally treated with massive doses of liver extract, parenterally administered, and in all a prompt, dramatic and complete remission was effected. All have been maintained in good health by means of injections of liver extract at intervals not exceeding one month.

In addition to being completely refractory to any sort of oral therapy, two of the individuals had received persistent and supposedly adequate parenteral treatment without improvement. It thus appears that a well defined threshold requirement for liver extract exists in certain cases of sprue, a threshold that must be exceeded before a remission can be established. When such a refractory case is encountered intravenous therapy is indicated, not only because it is more effective in raising the concentration of the required substance in the blood stream but also because it is the only route by which the required amount of material can be administered without causing serious discomfort and perhaps disability to the patient. Any patient with sprue admitted for treatment now receives intravenously an amount of liver extract[13] derived from 50 Gm. of liver each day until a clear-cut remission has been established.

The liver extract preparation found to be most effective is a relatively simple, unconcentrated product. Evidence is at hand that a certain loss of activity results from too great refinement and concentration. Patients with sprue have failed to improve on intramuscular injection of a large amount of a highly refined and concentrated product although a full remission has been effected by the use of a much smaller amount of material more simply prepared.

The mechanism of the production of the increase in the threshold requirement for liver extract is at present

13. Eli Lilly & Co. or Parke, Davis & Co.

unknown. An analogous situation may be observed in animals, however, in experimentally induced disease states due to the lack of certain accessory food factors. One of these experimental deficiencies is canine black tongue, a condition considered by Goldberger and Wheeler [14] similar to pellagra in human beings and due to a lack of the heat-stable, water-stable vitamin. In black tongue a refractory state may be induced if treatment is kept at the minimum required for preservation of life during repeated acute attacks. Eventually no amount of material rich in water-soluble vitamin will effect improvement, although a minute amount of the same substance is prophylactically effective.

The amount of treatment required to maintain a person with a high threshold requirement in good health, once a full remission has occurred, varies widely in different individuals. In one instance (case 2), intramuscularly administered liver extract is required at intervals of two weeks. If the treatment is delayed, gastro-intestinal symptoms recur and persist until liver extract is administered. In other individuals, treatment once in thirty days is sufficient to prevent recurrence.

As previously discussed, the effectiveness of liver extract in the treatment of sprue, coupled with other known facts, clarifies the etiologic mechanism of the disease. The efficacy of intensive treatment of cases refractory to less adequate measures is further evidence of the specificity of the effect of liver extract. The requirement of certain individuals for very large amounts of effective material administered parenterally is evidence of a threshold requirement that must be exceeded before a physiologic response can occur.

The emphasis that has been placed on the purely hematologic responses of pernicious anemia to liver has obscured the fact that corresponding improvement of the lingual and gastro-intestinal symptoms occurs. This was pointed out by Minot and Murphy in their original communications and has been commented on by others. The idea of treatment by diet of a gastro-intestinal disorder, such as sprue, is so thoroughly ingrained in the medical consciousness that it is difficult for it to abandon the conception of some beneficial quality of the diet, simply as a regimen. The foregoing discussion should serve to indicate that the occasional effectiveness of diet in the treatment of sprue is largely based on its ability to supply the water-soluble vitamin. Diet is, at best, an uncertain method of obtaining "liver extract" for the internal economy of the organism. By the use of parenteral liver extract the obstacles of dietary defect, gastric dysfunction and intestinal malabsorption are at once effectively surmounted.

SUMMARY AND CONCLUSIONS

1. Four cases of sprue were refractory to ordinarily effective treatment. Clinical cure followed intensive parenteral liver extract therapy.

2. The use of liver extract in sprue is indicated by the etiologic mechanism of the disease.

3. Sprue frequently requires much more intensive treatment with liver extract than does pernicious anemia.

4. The frequent parenteral administration of large amounts of liver extract is the therapeutic procedure of choice in sprue and should be continued until a remission is established.

Sixty-Sixth Street and York Avenue.

14. Goldberger, S., and Wheeler, G. A.: Bull. 120, Hyg. Lab., U. S. P. H. S., 1920, p. 7.

NORMAL CEREBROSPINAL FLUID DYNAMICS IN SPINAL CORD TUMOR SUSPECTS

JAMES L. POPPEN, M.D.
AND
LEWIS M. HURXTHAL, M.D.
BOSTON

As the result of the efforts of Ayer [1] and Stookey,[2] the technic of eliciting abnormal changes in cerebrospinal fluid dynamics has become so refined that an obstruction in the spinal canal can be detected earlier in the disease than formerly. Cases have been reported, however, in which tumors were found that appeared large enough to block the entire canal but normal dynamics were shown by lumbar puncture. The question therefore arises, What size must a tumor be in relation to the spinal canal before there are any demonstrable changes in dynamics? Patients have frequently been known to suffer from pains for years which were thought due to rheumatism, sciatica, sacro-iliac disease or neuritis, before any objective symptoms were detected to suspect an intraspinal lesion. In such instances a problem as to the value of a lumbar puncture always arises, especially when the tumor does not obliterate the subarachnoid space.

Elsberg [3] states that in about 20 per cent of the patients with spinal cord tumors the Queckenstedt test (jugular compression) may be expected to be negative. This statement was made before the refined technic of both Ayer and Stookey were proposed. The present percentage of a negative Queckenstedt test is much less if done by those who are familiar with the technic and careful in following its details. Too much emphasis cannot be laid on this. The details that seem most insignificant are sometimes very important. Nurses at times are careless in cleaning the manometers and valves before sterilization. The most accurate readings will be obtained if the manometers and valves are autoclaved instead of boiled; otherwise droplets of water are likely to remain on the inside of the manometer, thus forming pockets of air and increasing capillary attraction. This may make some difference in the rise and fall of the spinal fluid when the pressure readings are taken. A fairly reliable test to make one confident that the needle is in the subarachnoid space is to have the patient strain or cough. Following this there should be a rapid rise and fall in spinal fluid pressure, which is at once followed by the normal amplitude of the respiratory and pulse oscillations.

Our purpose in this paper is to give an adequate explanation of the occurrence of normal pressure changes during the Queckenstedt test in the presence of a spinal cord tumor. Such a case has recently come under our observation, the history of which is as follows:

M. S., a girl, aged 21, unmarried, came to the clinic complaining of pains on the right side of the abdomen, which had been present intermittently for two years with no associated nausea or vomiting. At first the pains were located mainly in the right

From the Lahey Clinic.

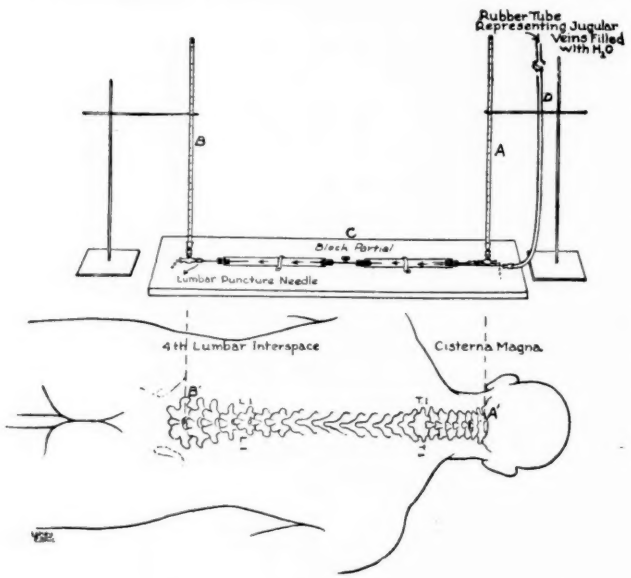
1. Ayer, J. B.: Spinal Subarachnoid Block as Determined by Combined Cistern and Lumbar Puncture, with Special Reference to the Early Diagnosis of Cord Lesions, Arch. Neurol. & Psychiat. **7**: 38 (Jan.) 1922.

2. Stookey, Byron; Merworth, H. R., and Frantz, A. M.: A Manometric Study of the Cerebrospinal Fluid in Suspected Spinal Cord Tumors. Surg., Gynec. & Obst. **41**: 429-442 (Oct.) 1925.

3. Elsberg, C. A.: Tumors of the Spinal Cord, New York, Paul B. Hoeber, 1925, p. 253.

upper quadrant. A gallbladder visualization showed normal function. The pains were aggravated by sudden twisting or bending of the neck and also by coughing. There was marked constipation but there were no bladder disturbances. There was a slight feeling of stiffness in the right leg for about two weeks previous to her entrance to the hospital. The rest of the history was irrelevant.

Physical examination showed moderate superficial and deep tenderness in the right lower quadrant. The abdominal reflexes were brisk and equal. The patellar and achilles reflexes on the right were markedly hyperactive (+++) and slightly less active on the left (++). A bilateral Babinski reflex was present. A very slight relative hypesthesia could be detected over the first and second lumbar skin areas on the right. Vibratory sense over the right internal and external malleoli was slightly diminished. The lumbar puncture showed an initial pressure of 120 mm. of water. Prolonged jugular compression brought an immediate rapid response, the fluid rising rapidly to 260 mm. and descending with the same speed on the release of the jugulars, the patient breathing normally throughout the procedure. The fluid, when compared with water, was slightly tinged with yellow. The total protein of the spinal



An artificial spinal canal with a partial block (*C*). A spinal puncture needle with manometer (*A*) attached is inserted into the caudal end, corresponding to the cisterna magna. Another spinal puncture needle with manometer (*B*) is attached to the caudal end representing the fourth lumbar interspace. The diameter of the bore of the needle at *C* can be varied at will. The rubber tube (*D*) filled with water serves to transmit pressure to the canal in the same manner as compression of the jugular veins. By compressing the rubber tube, no changes occur in the rise and fall of the water in either manometer as long as the diameter of the opening at *C* is equal to or greater than the diameter of the bore of the spinal puncture needles. As soon as the diameter of the opening at *C* is less than that of the spinal puncture needles, there is an immediate lag in the rise and fall in the manometer (*B*) when the pressure is applied to the rubber tube (*D*).

fluid was 60 mm. per hundred cubic centimeters. Iodized poppy-seed oil injected into the cistern twenty-four hours later stopped at the seventh thoracic vertebra; a few drops of the oil passed the obstruction after several hours. A laminectomy revealed a firm neurofibroma which was large enough to cause a pressure furrow in the spinal cord. There were no adhesions.

It is possible therefore to have a fairly large tumor in the spinal canal which does not give any signs of obstruction by the Queckenstedt test. To determine how large a spinal cord tumor must be before a partial block can be detected by lumbar manometric readings is obviously difficult because of the varying shapes and structures of the tumor. In considering this case in relation to hydrodynamics we concluded that as long as the unobstructed area at the site of the tumor was as large as the bore of the lumbar puncture needle there could be no abnormal dynamics. In view of Weed's[4] belief that the dural tube in live mammals may be considered fairly though not absolutely rigid, we attempted to demonstrate our conclusions as follows: Two cylinders, closed at each end by cork stoppers, were connected by a large needle, as shown in the accompanying illustrations. A rubber tube was attached to the proximal cylinder by a size 18 gage spinal puncture needle. The system was then filled with water and the rubber tube clamped. This, then, was to represent the spinal canal with a partial block. The rubber tube could be used to increase the pressure in the cephalad end of the canal at will by pressing it. A size 18 gage lumbar puncture needle was then inserted through the caudal cork and a manometer attached. By compressing the rubber tube, the increased pressure was indicated by an immediate and rapid rise of the fluid in the manometers. It was also found that, by changing the size of the opening at the artificial block, a rapid rise and fall of the fluid occurred in the manometers by pressing the rubber tube intermittently. There was no change from the normal until the size of the opening in the block was definitely less than the size of the opening in the lumbar puncture needles. In other words, if the cross sectional area of the bore of the needle used in the spinal puncture is of the same order of magnitude as the effective cross sectional area not blocked by tumor in the spinal canal, no abnormal pressure changes in the dynamics should occur.

Another 18 gage needle was inserted in the cephalad cylinder and a manometer attached. No changes occurred in dynamics in either manometer until the size of the opening at the block was less than that of the needles used in either end. Thus, when the diameter at the partial block was made smaller, there was a lag in water at *B* and a rapid rise and fall in water at *A* when the rubber tube was compressed. This would suggest that a partial block can be detected more quickly by a combined cisternal and lumbar puncture than by lumbar puncture alone. Thus it is very important to do the combined punctures when a questionable change in the dynamics is found during a lumbar puncture.

This, we believe, explains why the cerebrospinal fluid dynamics are normal in a small percentage of relatively large spinal cord tumors. In fact, as long as an opening remains in the entire length of the canal as large as the bore of the lumbar puncture needle, no changes from the normal should be expected as long as the character of the wall, the viscosity of the fluid and the size of the opening remain constant.

It also explains why the dynamics are normal in a certain percentage of cases before cerebrospinal has been removed and why, when from 5 to 10 cc. has been removed, the block first manifests itself as either a partial or complete obstruction. For instance, if the tumor is of such a size that it nearly fills the canal, the intraspinal pressure keeps an opening larger than the lumbar puncture needle. The removal of the fluid decreases the intraspinal pressure sufficiently to permit the dura and arachnoid to come in contact with the edges of the tumor and cord, thus producing block.

It should be emphasized, therefore, that a relatively large tumor may be present even though the dynamics are normal. If the patient's symptoms are suggestive of a spinal cord tumor, the cerebrospinal fluid dynamics are of real significance only when positive, and when

4. Weed, L. H.: Some Limitations of the Monroe-Kellie Hypothesis, Arch. Surg. **18**: 1049 (April) 1929.

negative the introduction of iodized oil into the canal must be considered as the next best method of detecting a tumor, if it is at all possible. The diagnosis of spinal cord tumor should not be absolutely dismissed because the cerebrospinal fluid dynamics are normal.

605 Commonwealth Avenue.

PRESENT ENDOCRINE DIAGNOSIS AND THERAPY

A CRITICAL ANALYSIS BASED ON HORMONE STUDIES IN THE FEMALE

ROBERT T. FRANK, M.D.
MORRIS A. GOLDBERGER, M.D.
AND
FRANK SPIELMAN, M.D.
NEW YORK

It is difficult to keep one's footing in a stampede and practically impossible to think or plan connectedly during a panic. Therefore, the members of the medical profession as well as the public, who have been caught in the whirlwind sweep of this new medical advance, have lost all sense of proportion, direction and balance whenever the subject of endocrinology is touched on. In spite of the turmoil, real progress can be recorded, often unheard, because of incoherent babble and ballyhoo, which is more vocal than constructive and conservative advances.

It has been our effort since 1925 to place the study of functional endocrine disturbances of the female sex organs on a more solid foundation and to devise methods that will permit evaluation of conditions comparable to metabolism determinations. Although our methods are now used in many laboratories throughout this country and abroad, the profession at large has not made use of these aids in diagnosis, prognosis and treatment to the extent that the information obtained by these technics appears to warrant.

The material on which our results are based, from January 1926 to December 1933, includes 1,773 estrogenic substance tests on blood performed in our laboratory; 1,269 urine tests for estrogenic substance; 661 anterior pituitary tests on the blood; 78 anterior pituitary-like tests on the urine; 1,843 tissues, cyst fluids, bile, cerebrospinal fluid and the like tested for estrogenic substance, and 916 pregnancy tests.

This large material which we have accumulated appears to warrant comprehensive publication. Perhaps it may help to clarify some of the confusion, loose reasoning and overenthusiasm that threatens further to obscure a very complex subject. Concrete data may serve in restoring balance and proper perspective.

In the spring of 1925 the presence of estrogenic substance was demonstrated in the circulation.[1] In the fall of the same year a clinical method for determining the presence of this hormone was devised.[2] In 1926, after Loewe[3] had demonstrated the presence of the estrogenic substance in the urine, a method was published for determining its excretion in the urine.[4] In 1931 we[5] described a clinical quantitative test for the determination of the anterior pituitary hormone in the blood of nonpregnant women. Previously such determinations had been limited to the duration of pregnancy or the period after the menopause, at which times the anterior pituitary hormone values are sufficiently increased to permit testing without concentration.

METHODS EMPLOYED

The details of our methods can readily be obtained from previous publication.[6] Two main hormone constituents have been studied, the one the estrogenic substance,[7] the other the anterior pituitary type of substance known as the gonadal stimulating hormone, gonadotropic hormone and closely related bodies, prolan (Zondek) and pituitary-like hormone (Collip).

The estrogenic substance is concentrated by lipoid extraction of the blood or urine. The blood tests represent weeky samples of vein blood, 40 cc. being used.[8]

The urine studies which show the entire output of estrogenic substance in successive seventy-two hour specimens are obtained by continuous chloroform extraction. The test object for the estrogenic substance, irrespective of its source, is the castrated adult mouse. The smallest amount of extract that in forty-eight hours produces a characteristic change in the vaginal spread is recorded as a mouse unit (fig. 1).

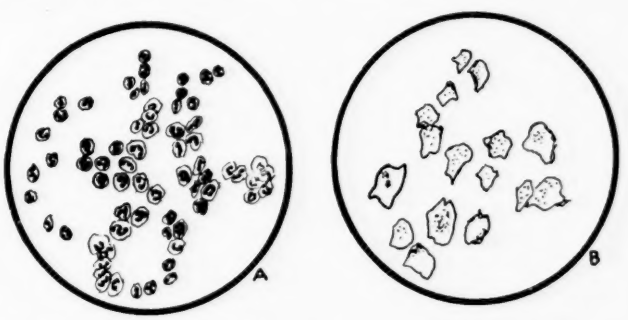


Fig. 1.—Vaginal spread of castrate mouse: *A*, negative, leukocytes; *B*, positive, spread from same mouse forty-eight hours after injection of extract containing at least one mouse unit of estrogenic substance.

The anterior pituitary types of hormone are obtained by us with acid alcoholic extractions of the 40 cc. of blood specimens previously freed from estrogenic substance. The anterior pituitary-like hormone is extracted from the seventy-two hour specimens of urine by means of either alcohol precipitation[9] or adsorption.[10]

The test animal for the prepituitary reaction is the immature noncastrated rat and the test is recorded in

From the Gynecological Service and Laboratories of the Mount Sinai Hospital.

1. Frank, R. T.; Frank, Marie-Louise; Gustavson, R. G., and Weyerts, W. W.: Demonstration of the Female Sex Hormone in the Circulating Blood: I. Preliminary Report, J. A. M. A. **85:** 510 (Aug. 15) 1925.

2. Frank, R. T., and Goldberger, M. A.: The Female Sex Hormone: IV. Its Occurrence in the Circulating and Menstrual Blood of the Human Female: Preliminary Report, J. A. M. A. **86:** 1686 (May 29) 1926.

3. Loewe, S., and Lange, F.: Der Gehalt des Frauenharnes an brunsterzeugenden Stoffen in Abhängigkeit von ovariellen Zyklus: Ueber weibliche Sexualhormone: VII. Mitteilung, Klin. Wchnschr. **5:** 1038 (June 4) 1926.

4. Frank, R. T.: The Rôle of the Female Sex Hormone, J. A. M. A. **97:** 1852 (Dec. 19) 1931.

5. Frank, R. T.; Goldberger, M. A., and Spielman, Frank: A Method for Demonstrating Prepituitary Maturity Hormone in the Blood of Nonpregnant Women, Proc. Soc. Exper. Biol. & Med. **28:** 999 (June) 1931.

6. Frank and Goldberger.[2] Frank.[4] Frank, Goldberger and Spielman.[5] Frank, R. T., and Goldberger, M. A.: The Female Sex Hormone: VIII. Simplification of Technic, J. A. M. A. **90:** 376 (Feb. 4) 1928.

7. The term "female sex hormone" was employed by us in former papers in THE JOURNAL to designate the "estrogenic principle" found throughout the plant and animal kingdom.

8. It would be preferable if more frequent blood tests could be taken and each test titered on several animals. To counteract the individual susceptibility of test mice the amount of blood extracted has been increased from 35 cc. to 40 cc. Perhaps the "Fluhman test," which is based on a mucifying action on the vaginal epithelium—if found identical with our methods—may prove of value.

9. Zondek, Bernhard: Weitere Untersuchungen zur Darstellung, Biologie und Klinik des Hypophysenvorderlappenhormons (Prolan), Zentralbl. f. Gynäk. **53:** 834 (April 6) 1929.

10. Katzman, P. A., and Doisy, E. A.: A Quantitative Procedure for Determining Normal Excretion of Prolan, Proc. Soc. Exper. Biol. & Med. **30:** 1188 (June) 1933.

rat units. For this test the changes taking place after 100 hours in the ovarian follicle are evaluated (fig. 2).

The pregnancy tests of Aschheim and Zondek [11] and Friedman [12] were employed unchanged just as these authors recommended.

THE HORMONE CYCLE IN THE NORMAL FERTILE MENSTRUATING FEMALE

Such a remarkable congruence was found in two composite graphs of the blood, based respectively on two series of women, the first dating from our earlier work in 1925 to 1928,[13] and the second in another group from 1930 to 1933, that marked deviations from this standard type may be considered abnormal and of significance.

In the normal menstruating fertile woman the 40 cc. blood samples do not contain a full mouse unit until from seven days before the menses. With the onset of bleeding, the blood level again decreases.

The urine cycle for estrogenic substance is likewise characteristic. About the tenth day and again about three days before the menstrual bleeding, increased excretion takes place. The normal monthly total output is from 1,200 to 1,500 mouse units (fig. 3).

An earnest warning must be given against short cut technics by which attempts to draw conclusions from single isolated tests are attempted. The data thus obtained are valueless, as their interpretation depends on accidental variations (fig. 3).

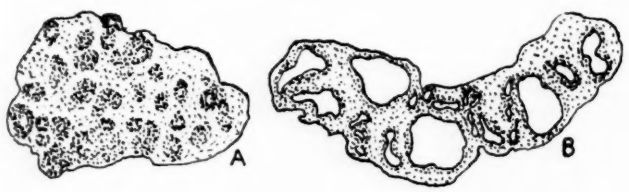


Fig. 2.—Sections of ovaries of immature rat: *A*, normal untreated animal, primordial follicles; *B*, anterior pituitary reaction 1: ovary of immature rat 100 hours after injections of extract containing at least one rat unit of prepituitary or anterior pituitary-like extract. The follicles are enlarged and cystic.

In the blood there likewise is an anterior pituitary hormone cycle.

Between the eighth and the tenth day, a full rat unit (R. U.) is present in the 40 cc. blood specimen. Before and after, smaller quantities are found (fig. 3, broken line).

Although minor discrepancies have been noted here and there, our earlier conclusions, based on blood and urine studies, which lead us to divide functional disturbances of the genital tract into two large classes, those of underfunction and those of overfunction, have been confirmed more and more by the accumulation of larger groups of patients.

PREPUBERTY AND PUBERTY

To what degree the ovaries function before puberty is of interest. Our studies on the estrogenic substance before the onset of puberty are still quite fragmentary. A titer of the excretion on a child, aged 3 years, menstruating cyclically since the age of 6 months, shows that there is cyclic excretion under these conditions.[14]

Our studies on a small group of normal children between the ages of 4 and 13 years show that very little estrogenic substance is usually excreted before puberty; an amount readily accounted for by the alimentary intake (an ordinary potato contains, for example, 2 mouse units of estrogenic substance).

Of fifteen children, only two gave any positive reaction. A 4 year old girl showed 1 mouse unit in 500 cc. of urine; a 9 year old girl, 1 mouse unit in 250 cc.

A child investigated for cyclic vomiting at the age of 12½ years showed cyclic but less excretion of estrogenic substance than that seen in the adult menstruating female but more than in younger children (725 mouse units). Two and one-half months later the first menstruation appeared in this patient, and since that time the cyclic vomiting, which had occurred every four to four and one-half weeks, has disappeared completely.

THE UNDERFUNCTIONING OVARIES, STERILITY, AMENORRHEA (DYSMENORRHEA AND OLIGOMENORRHEA) AND THE MENOPAUSE

Unless the ovaries have been directly injured by local action, such as by x-rays, we ascribe underfunction, with few exceptions, to primary pituitary disturbances. The gonads, in spite of their prime biologic importance, are subsidiary glands under the direct control of the anterior pituitary (adenohypophysis) and dependent on the prepituitary cycle (fig. 3).

Patients with underfunction, clinically identical, with monotonous regularity, fall into three main groups, (1) subthreshold blood cycle, (2) acyclic blood but cyclic urine cycle, and (3) acyclic, in both blood and urine (fig. 4).

With equal regularity, according to this hormone grouping, the prognosis in class 1 has proved encouraging, irrespective of the duration of the complaint (sterility, oligomenorrhea, amenorrhea); in class 2, doubtful; in class 3, bad.

Amenorrhea.—The three hormone types characteristic of amenorrheas and all underfunctions of the ovaries allow for many individual variations, which enhance the difficulties of prognosis and, consequently, the evaluation of treatment, as can be readily illustrated:

A woman, aged 28, had been married three years and was sterile. The menses had never been regular. She showed many endocrine stigmas, including moderate hirsutism with male escutcheon, a clitoris five times the normal size, and a high symphysis. The basal metabolism was plus 12, and roentgen examination of the sella was normal. The sugar tolerance was normal. The fourth blood specimen showed a strong accumulation of estrogenic substance. The urinary excretion of this hormone was likewise normal (1,825 mouse units). Hence we predicted an impending menstruation, which actually took place five days later, to the great surprise of the patient.

We have had a number of similar cases in which impending menstruation could be predicted by means of the blood studies—one after six years of amenorrhea and one after seven years. Had any therapy been given, this would have been hailed as miraculous in its effect by both patient and medical attendant.

In another patient a cyclic accumulation of estrogenic substance in the blood but a much smaller excretion of estrogenic substance in the urine (900 mouse units total) was noted (fig. 4 *B*). In this patient, aged 33, although the amenorrhea was five years in duration, an absolutely good prognosis was given, which the subsequent course fully justified.

In sharp contrast with the two cases just described is one of primary amenorrhea in a girl, aged 20, who made a very

11. Aschheim, Selmar, and Zondek, Bernhard: Schwangerschaftsdiagnose aus dem Harn (durch Hormonnachweis), Klin. Wchnschr. **7**: 1404 (July 22) 1928.

12. Friedman, M. H., and Lapham, M. E.: A Simple Laboratory Procedure for the Diagnosis of Early Pregnancies, Am. J. Obst. & Gynec. **21**: 405 (March) 1931.

13. Frank, R. T.: The Female Sex Hormone, Springfield, Ill., Charles C. Thomas, 1929.

14. Frank, R. T.: Premature Sexual Development in Children Due to Malignant Ovarian Tumors, with Special Reference to Hormonal Studies and After-Treatment, Am. J. Dis. Child. **43**: 942 (April) 1932.

normal physical impression, in whom a hormone study extending over five weeks showed a minimal subthreshold quantity of accumulation of estrogenic substance in the blood and almost a total absence of excretion in the urine (125 mouse units total). In this case the prognosis was very bad.

The symptoms complained of by these patients vary greatly. In the younger group, primary amenorrhea brings the patient under observation if menstruation has not occurred at the time that racial and familial expectancy lead one to anticipate it (from the fifteenth to the twentieth year). Other children become amenorrheic after a a longer or shorter period of menstruation (secondary amenorrhea). Adults who have reached the age of from 20 to 35 without menstruation are less common.

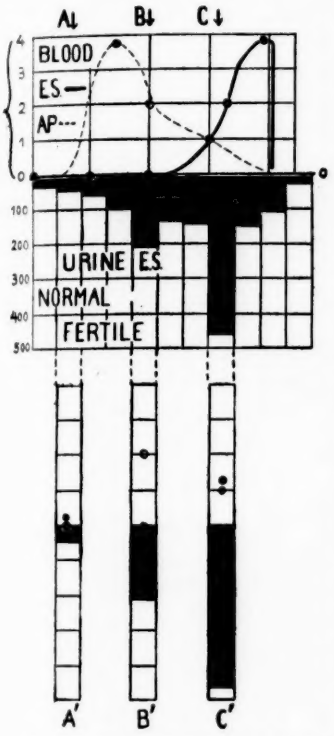


Fig. 3.—Hormone cycle (E. S. and A. P.) of normal fertile menstruating woman.

Above base line (O), record of blood specimens taken every seven days. Black dots, E. S., estrogenic substance (solid line); small circle, A. P., anterior pituitary (broken line); above 2½ = positive; below 2½ = negative; i. e., less than 1 mouse unit in 40 cc. of blood. Below base line, total excretion of estrogenic substance in urine. Figures to the left show amount of mouse units. Total excretion 1,500 mouse units of estrogenic substance. Each block represents three days. *A' B' C'* to show that single blood and urine specimens are valueless and misleading.

After marriage, the same or similar patients seek advice because of sterility. Before hormone investigations are made, the potency of the husband and the absence of cervical and tubal infection as well as mechanical permeability of the tubular tract are determined. At the same time amenorrhea may or may not be complained of.

Dysmenorrhea appears with great frequency in the group of patients who are overworked, infantile, and often sterile.

The secondary amenorrheas and sterilities are most often noted in patients afflicted with obesity. If the obesity is due to overeating, judicious dieting will afford prompt relief. Pituitary obesity is resistant; thyroid insufficiency, which unfortunately is uncommon in these fat women, is most amenable to treatment. Amenorrhea due to asthenia is found in systemic disease (tuberculosis), psychoses, or in the infrequent cases of Simmond's disease and suprarenal insufficiency.

Amenorrhea in Absence of Vagina: Occasionally nature supplies a critical experiment. Patients with absence of the vagina may be normal in feminine configuration, eunuchoid, or verging toward the masculine. Our experience now covers seventeen cases, of which fourteen have been studied in detail.[15] The hormone studies, with two exceptions, show a definite cycle, which enables us to state that twelve of these patients are feminine individuals. Retention of blood in the vestigial genital tract cannot occur because the uterus is solid and without endometrium. When no sex cycle was noted, the sex of the patient remained undetermined.

Figure 5 shows a twenty-one day blood cycle with a fairly normal amount of urinary excretion (1,040 mouse units). On the other hand, the blood cycle may be absent, the excretion in the urine resembling that found in puberty bleeding; in one instance 4,600 mouse units was excreted during a period of thirty-three days, which is approximately three times the normal.

In both of these cases we are able to state that functionating ovaries are present; in fact, it would seem that in the second case they are overfunctioning.

However, from a study of the graphs of these twelve patients, it appears that when there is an accumulation of estrogenic substance in the blood, less is excreted in the urine. Whether this implies a definite utilization of the hormone by the normal uterus is as yet an open question, nothing being known as to how the estrogenic substance or in fact any hormone acts or combines locally.[16]

The Menopause.—The symptoms of the menopause, irrespective of whether normal and spontaneous, or artificially induced by operation (hysterectomy, double oophorectomy, or combined hysterectomy and salpingo-oophorectomy), are usually identical, consisting subjectively of protean neurovascular disturbances. If the patient is young and the ovaries, one or both, are left in situ, local atrophy of the introitus and vagina remains in abeyance.

Hormonally, however, marked differences are found:

Normal Menopause: Figure 6 shows what is considered the most typical finding of a high anterior pituitary reaction of the blood; no demonstrable estrogenic substance is found in the blood or in the urine.

This anterior pituitary overload in the blood is noted in less than 50 per cent of such patients. Not infrequently, a year or more after the menopause, estrogenic substance is still cyclically excreted. This is not surprising, since follicles may be found in senile ovaries.

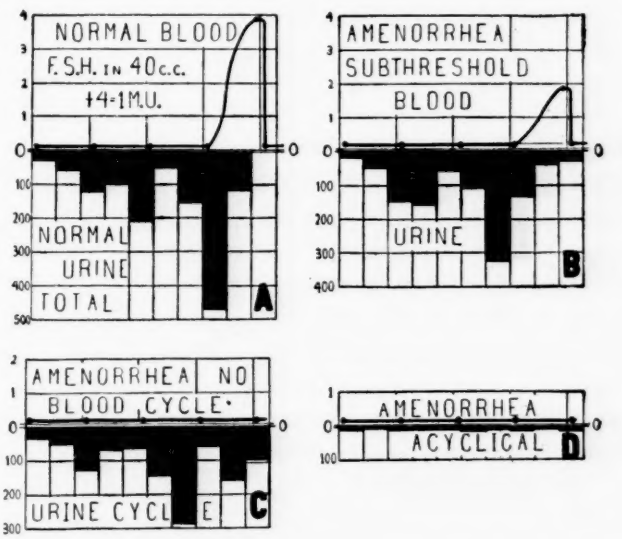


Fig. 4.—Occurrence of estrogenic substance in the blood and urine of normal and amenorrheic women: *A*, normal; *B*, subthreshold; *C*, negative blood cycle, positive urine cycle; *D*, acyclic.

15. Frank, R. T., and Goldberger, M. A. The Female Sex Hormone: V. A New Method of Determining Sex in the Presence of Malformation of the Genital Organs, J. A. M. A. **87:** 554 (Aug. 21) 1926.

16. The sole evidence that a local accumulation of hormone actually occurs is supplied by the menstrual blood. While the circulating blood, just before the time of menstruation, contains 1 mouse unit to every 40 cc., the blood sickering through the endometrium (menstrual) may contain as much as 1 mouse unit to 2 cc. Blood drawn by cupping from the portio vaginalis during menstruation, however, contains only the same amount of hormone as that found at any given time in the general circulation.

Artificial Menopause: Figure 7 shows blood studies performed on a woman, aged 35, whose uterus was removed seventeen years previously. A definite blood cycle of estrogenic substance has continued. This is the longest persistence of ovarian function with absence of the uterus that we have had the opportunity to observe.

In older women only the uterus of whom has been removed, a blood cycle with scanty excretion in the urine is evidence of persistent but diminished ovarian function.

In other patients if the anterior pituitary factor in the blood is high and no blood or urinary excretion of estrogenic substance is found, the true physiologic menopause is shown to have taken place.

Removal of the uterus need not abolish the blood and urinary cycle for anterior pituitary and estrogenic substance. From these examples of studies on both the natural and the artificial menopause it should be clear that, although the symptoms complained of may be identical, the humoral conditions may differ widely in different individuals. This, too, may explain the great divergence in response to therapy noted in different women.

Vicarious Menstruation—Molimina. — Considerable prominence has been given to "vicarious" menstruation. A study of patients with primary amenorrhea suffering with "cyclic" epistaxis showed no blood or urinary cycle. In the blood sickering from the nose, no estrogenic substance could be demonstrated. In our experience, no case of true vicarious menstruation has been observed.

In sharp contrast to this, "molimina" in amenorrheic patients, such as engorgement of the breasts, pelvic heaviness and periodic leukorrhea, may signify cyclic ovarian function, as shown in figure 8.

OVERFUNCTION OF THE OVARIES: PUBERTY BLEEDING, MATURITY MENORRHAGIA AND METRORRHAGIA, PRECLIMACTERIC HEMORRHAGES (PREMENSTRUAL TENSION)

Again, as in the preceding group, disturbance of the anterior pituitary must be regarded as the etiologic factor.

From our studies it has become apparent that the blood hormone level for estrogenic substance is a most

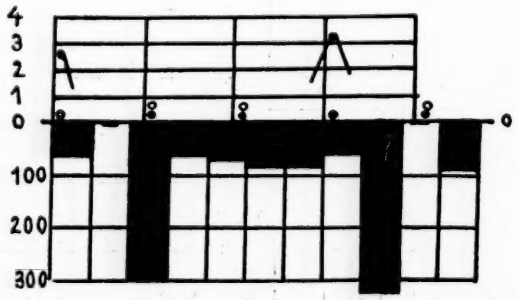


Fig. 5.—Absent vagina: Twenty-one day blood cycle; normal urine cycle.

delicately balanced mechanism in which the normal by our method of extraction is approximately 1 mouse unit to 40 cc. of blood, or 25 mouse units per liter. Only after the eighth week of pregnancy is this level exceeded, at which time not more than twice this amount normally accumulates in the blood (50 mouse units per liter).

This high level also occurs in a small group of cases which we designate as "premenstrual tension." No such increase develops when huge doses of estrogenic substance are injected intravenously or even when a great excess is spontaneously produced, as in suprarenal tumors.[17]

And yet, without exceeding the higher physiologic limit, the same amount of estrogenic substance, depending on the rapidity or failure of excretion, may and does produce the differences illustrated in figure 14. This difference in effect is due to differences in the level of excretion, which varies greatly in different individuals and, as we have previously stated,[18] may also vary at different times of the cycle in the same individual. This variation in excretory threshold is

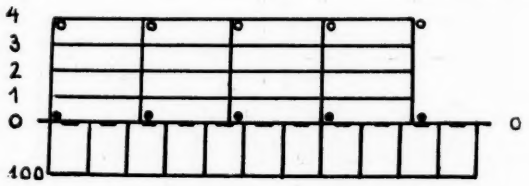


Fig. 6.—Natural menopause in a woman, aged 53. High anterior pituitary reaction. No blood or urine cycle.

probably directly influenced by the pituitary secretion, which is cyclic in the normal female (fig. 3, broken line).

The symptoms of ovarian overfunction in the majority of instances are excessive and irregular bleeding—menorrhagia and metrorrhagia. In the "tension" cases, mentioned before, bleeding is normal. In suprarenal tumors, amenorrhea predominates. If the blood hormone level is persistently high and no cyclic excretion of estrogenic substance occurs through the urine, amenorrhea should result.[19]

Excessive bleeding, we have found as a rule, bespeaks overfunction of the ovaries because, almost without exception, these bleeding cases show a markedly excessive excretion of estrogenic substance in the urine, although the amount recoverable from the circulating blood may actually be diminished.

In our large material, only three exceptions to this rule so far have been noted, both in patients with diminished thyroid function and in obesity (relieved by thyroid extract).

Menstrual bleeding in its simplest form, although this does not correspond to the true physiologic menstrual process, can be experimentally induced in castrated primates by the continued injection of large amounts of estrogenic substance. Bleeding does not occur if the proper hormone level is maintained until the injections are stopped (in the macaque[19] and in man[20]).

The prerequisites for normal menstruation, on the other hand, are more complicated. They consist in preliminary preparation of the uterus by estrogenic substance and then sensitization by the special corpus luteum hormone (progestin). Unless these two factors act in succession on the uterus, nidation is impossible.

"Anovular" menstruation has been much featured in the recent literature, consisting in ripening of the follicles, with consequent production of estrogenic substance, but without

17. Unpublished data.

18. Frank, R. T.; Goldberger, M. A., and Spielman, Frank: Utilization and Excretion of the Female Sex Hormone, Proc. Soc. Exper. Biol. & Med. **29:** 1229 (June) 1932. Frank, R. T., and Goldberger, M. A.: The Female Sex Hormone: XI. Utilization of the Hormone in the Normal Woman: Effect of Abnormal Kidney Permeability in the Production of Amenorrhea and Sterility, J. A. M. A. **94:** 1197 (April 19) 1930.

19. Allen, Edgar, and Baker, D. D.: Menstrual Periods Induced in Ovariectomized Monkeys by Estrus-Producing Ovarian Hormone, Am. J. Obst. & Gynec. **20:** 85 (July) 1930.

20. Clauberg, C.: Die Wirksamkeit des Luteohormons, das spezifische Hormons des Corpus luteum, am menschlichen Uterus, Zentralbl. f. Gynäk. **56:** 2460 (Oct. 8) 1932.

ovulation or formation of the corpus luteum.[21] This type of disturbance is said to produce both cyclic menstruation and irregular bleeding. Clinically, it is best exemplified by the usually transitory condition known as "polycystic or microcystic ovaries."

Our studies of cyst fluids are interesting in this connection. Follicle cysts of all sizes, if lined by granulosa cells, contain estrogenic substance in considerable concentration. Simple "serous" cysts give no estrual reaction, nor is any effect produced by pseudomucin or dermoid cyst fluid.

On the other hand, polycystic ovaries may likewise cause amenorrhea if the blood hormone level for estrogenic substance remains continuously high. This produces chronic hyperplasia of the endometrium, amenorrhea, and an excessive continuous excretion in the urine of the estrogenic substance—the "polyhormone amenorrhea" of Zondek and others—"amenorrhea of overfunction." Our observations lead us to consider this group much less numerous than was at first believed.

In marked contradistinction to the hormone conditions found in functional bleeding, the irregular uterine bleedings due to inflammation (tubal, peritubal, cellular exudates), tumors of the uterus (including small submucous fibroids) show either a normal or a subnormal amount of estrogenic substance excreted through the urine, thus affording a characteristic differential, useful in diagnosis.

The following groups illustrate overfunction:

Puberty Bleeding.—This constitutes a fairly numerous group between the ages of 10 and 20 years.

Figure 9 charts the bleeding of a girl, now 17 years old, watched for five years during which time curettement was done three times (hyperplastic endometrium) and transfusion four times (hemoglobin down to 30 per cent on one occasion). No blood studies were made; repeated urine studies showed typical overexcretion.

The menstrual blood in these cases contains much estrogenic substance, as high as 500 mouse units per liter for days and weeks.

Adult Menorrhagia and Metrorrhagias.—This large group is most often encountered by the physician. In the early stages the patient's uterus is normal. The uterus eventually, in the course of years, enlarges symmetrically (at first boggy, later firm and fibrous). Curettings show hyperplastic, polypoid or cystic endometrium. The ovaries are normal or may be "microcystic."

A woman, aged 23, married for five years, had had an abortion five years before. She started to menstruate at 13

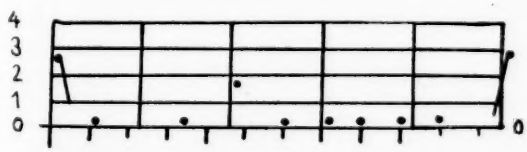



Fig. 7.—Induced menopause. Hysterectomy seventeen years previously at age of 17 years. Cyclic ovarian function has persisted seventeen years.

years and bled excessively every two weeks. She had had radium treatments at another hospital. The blood studies (fig. 10) showed a fifteen-day blood cycle, excretion in thirty-three days 4,185 mouse units (normal 1,500 mouse units). Six months later she became pregnant with a normal termination, good evidence that such conditions are functional and often self limited.

Figure 11 shows one cycle in a woman, aged 31, who had had an ovarian cyst removed five years previously. The menorrhagia had existed for two years. After the blood studies were completed, bleeding became and has remained normal without treatment. The studies extend over two four and one-half week periods (only one of which is shown). In both an occasional, but not cyclic, accumulation of estrogenic substance in the blood was noted. In both a marked excess of estrogenic substance was excreted: 6,000 mouse units and 7,425 mouse units (normal 1,500 mouse units).

In sharp contrast to these typical cases and charts are two examples of organic disease, the first from a patient whose bleeding was due to small submucous fibroids, the other suffering from subacute adnexal

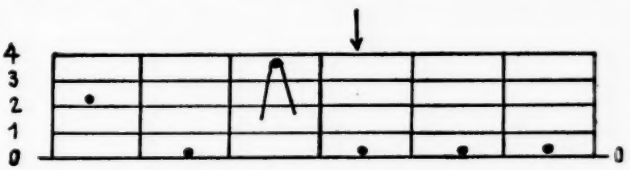



Fig. 8.—Amenorrhea: molimina. Arrow indicates time of breast engorgement and pelvic pain. Blood cycle occurs.

inflammation (figs. 12 and 13). In both it will be noted that the ovarian function is low.

Preclimacteric Bleeding.—This shows the same changes as in puberty bleeding and appears to be due to the same functional causation.

Premenstrual Tension (overfunction without excessive bleeding).[22]—In this carefully studied group, characteristic psychic and physical symptoms develop increasingly from the second week on until the onset of menstruation. Within one to six hours after the flow begins, complete relief is experienced.

An illustrative case in a woman, aged 40, showed psychic instability and unrest; she stated that she felt "like jumping out of her skin." Physically there were tense breasts, edema of the ankles, and pelvic engorgement.

Figure 14 shows the typical marked progressive increase of estrogenic substance in the blood (first week 40 cc. gives 2 plus reaction, second week 40 cc. gives 4; third week 30 cc. gives 4; fourth week 20 cc. gives 4. In the normal female 40 cc. gives 0 until the fourth week, then 40 cc. gives 4).

In marked contrast to the blood curve, the urinary threshold in these women is high, only from 250 to 350 mouse units being excreted during a cycle (normal 1,500 mouse units).

This condition exemplifies the strong effect produced by comparatively small amounts of hormone if excretion, and perhaps also utilization or destruction, is defective.

PREGNANCY CONDITIONS

Because of limitations of space, hormone studies in normal and abnormal pregnancy, as well as in chorionepithelioma in the male, will be reserved for later publication.

DIAGNOSIS

In the preceding we have given a brief review of the results derived from our hormone studies. The information obtained from hormone graphs on ovarian function have thrown light on symptoms and diagnosis as well as on the reason for success or failure of the therapy. However, such studies, though they serve as valuable aids, cannot replace clinical acumen and experience.

The general impression made by a patient on an experienced observer is of much importance. It is essential to have the patient strip in order not to be deceived by artificial and adventitious aids. On the one

21. Schroeder, Robert: Arch. f. Gynäk. **110**: 63, 1919. Geist, S. H.: Absence of Corpora Lutea in a Case of Atypical Uterine Hemorrhage, J. A. M. A. **78**: 1185 (April 22) 1922.

22. Frank, R. T.: The Hormonal Causes of Premenstrual Tension, Arch. Neurol. & Psychiat. **26**: 1053 (Nov.) 1931.

hand, it is surprising to see how those not specially trained will overlook marked evidence of serious endocrine disturbances and, on the other hand, ascribe to endocrine causes symptoms clearly due to local diseases.

R. M. was a most peculiar looking individual, definitely acromegalic, with hirsutism, exophthalmos, the clitoris six

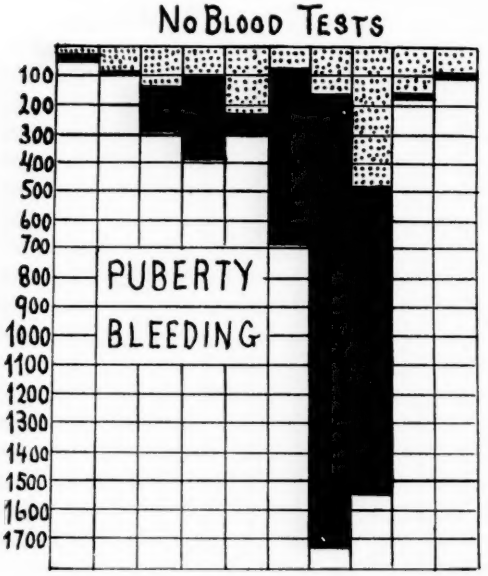


Fig. 9.—Puberty bleeding; overfunction shown by excessive excretion of estrogenic substance (5,330 mouse units in black). The stippling shows amount excreted by a normal woman and superimposed as a contrast.

times the normal size, the labia resembling a split scrotum, a funnel-shaped introitus, and bandlike high fourchette. In spite of these well marked stigmas of external pseudohermaphroditism and of serious general endocrine disturbance, the patient was curetted and later had her ovaries resected for menorrhagia. A year later insufflation tests were performed because she had not conceived.

To avoid gross mistakes of this kind, it is essential to train the eye to recognize the various types that may still be considered normal, although they may merge into those suffering from actual endocrine disease.

A nontechnical classification is as follows:

Normal feminine.
Infantile with excessive trunk length.
Eunuchoid with excessive extremity length.
Masculine, harsh voiced, phlethoric, hirsute.
Acromegaloid.
Thyroid (±); myxedemoid (—); basedoid (+).

In order not to be misled, we try to obtain photographs of the patient at various ages and, whenever possible, compare the given individual with other members of the family, for nature permits itself wide variations in type, both racial and familial. In this way a tall individual coming from a tall family would not *eo ipso* be classified as eunuchoid, or a short thick-set individual in whom all the members of the family show similar traits without symptoms will not, offhand, be classified as a Froehlich type of individual.

In seeing a large number of patients suspected of endocrine disturbance, the experienced diagnostician will not find it necessary to subject every individual to a complete workup. In what appears to be a mild transient disturbance, whether menorrhagia, amenorrhea, sterility after short periods of marriage or the like, often merely a thorough physical examination is given and further study is postponed in the hope that spontaneous rectification will take place during observation.

Whenever the duration of the disease, however, has been longer or when real endocrine stigmas are noted, certainly in any endocrine clinic, more detailed studies must be undertaken. In the main these consist of complete physical examination, blood count including differential count, anthropometric measurements, basal metabolic tests, a roentgen examination of the sella turcica, fundus and visual field examination, and always in obesity cases a sugar tolerance test (Janney).

After these data have been obtained we decide whether a hormone test extending over an entire cycle or, if the patient is amenorrheic, over a period of five weeks, is indicated.

The roentgenogram of the sella has been particularly useful. During the course of each year we pick up several silent pituitary neoplasms which usually mask under the guise of an innocent amenorrhea or obesity, not infrequently a combination of the two.

E. W., a woman, aged 22, had had amenorrhea for five years. A roentgenogram of the sella showed an enlarged floor and marked thinning out of the sphenoid. At operation a pituitary tumor was removed.

E. S., a woman, aged 23, had one child nine months before and had been bleeding excessively since. The patient was 5 feet 4½ inches (164 cm.) tall and weighed 223 pounds (100.7 Kg.). A hormone study was made in which no blood cycle was noted and only 405 mouse units of estrogenic substance was excreted in the urine (one third of the normal). A previous sellar roentgenogram showed a very large sella. There was some blurring of the right ocular disk, although vision was not yet impaired. Perimetric examination showed concentric diminution of the visual fields.

The patient was then lost sight of. I have since learned that she has had a resection of the ovaries performed for the bleeding at another institution, where apparently no attention was paid to the serious endocrine changes, which will eventu-

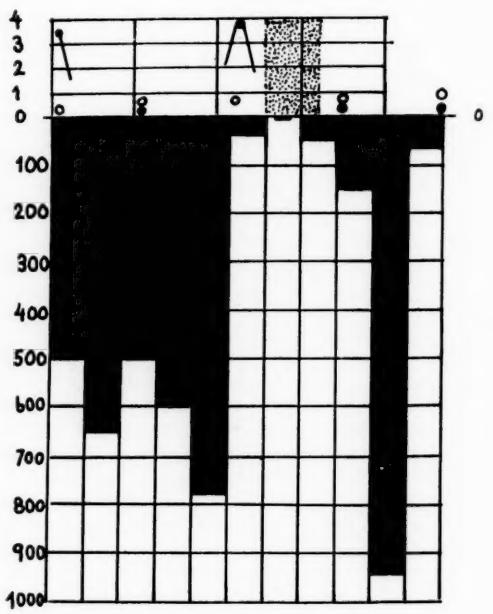


Fig. 10.—Menorrhagia: fifteen day blood cycle; excessive excretion (4,185 mouse units). Stippled area shows uterine bleeding.

ally lead to typical cerebral symptoms of pituitary tumor from which this patient suffers.

Basal Metabolism.—We always hope, in cases of obesity, to find a diminished basal metabolism. This hope is, however, rarely fulfilled, as the majority of obese patients show a normal metabolic rate and many of them do not tolerate thyroid in any form.

In underweight asthenic patients, the basal metabolism is frequently found below normal, at times running as low as minus 20. Our experience has been that in many of these patients, by increasing the protein factor of the diet, the metabolic rate may be restored to normal. Before resorting to thyroid medication, we prescribe this dietary change.

Blood Examinations.—Whenever in adult patients there is a permanent increase in the lymphocytes, this is considered an indication of real endocrine disturbance. This increase, which may reach a total of from 40 to 60 per cent, is found quite regularly in thyroid disturbances of both overfunctional and underfunctional types, occasionally in acromegaly and not infrequently in obesities. While not helpful in actual diagnosis, it is usually a warning that a real endocrine malady is present.

Sugar Tolerance.—In all cases of obesity that do not respond to diet, it is our custom to perform a Janney test after the patient has been on a reduced carbohydrate diet for at least a week. Persistence of a high sugar level in the blood, without appearance of sugar in the urine, regularly bespeaks an obesity that will not respond readily to the ordinary dietary measures.

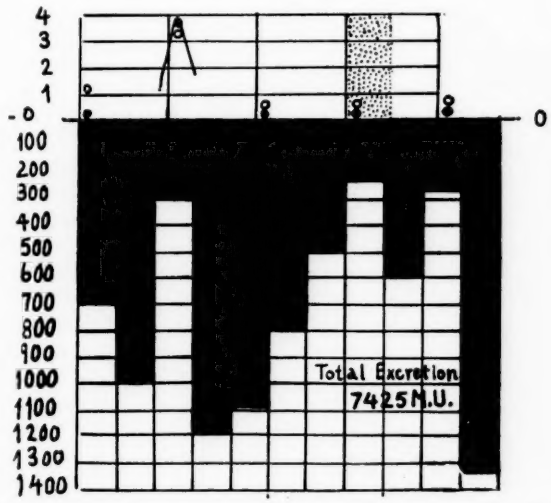


Fig. 11.—Menorrhagia. Cycle showing marked overexcretion (7,425 mouse units).

TREATMENT

Our hormone studies were undertaken in the hope not only of learning more about the nature of the various diseases studied but also with the expectation that these studies might prove useful in the devising of successful therapeutic measures. Our expectations have been realized only to the extent of preventing self deception as to our therapeutic results and throwing much light on the self limitation of many endocrine disturbances with spontaneous cure. The following dramatic cases will throw some further light on these statements:

R. B., a women, aged 22, whose marriage had been sterile for three years, had periods of amenorrhea for from six to three months. The patient was of the infantile type. She was 4 feet 11 inches (150 cm.) tall and weighed 93 pounds (42.2 Kg.), normal 113 pounds (51.3 Kg.). The basal metabolism was minus 2 per cent. The blood pressure was 120 systolic, 98 diastolic. The Janney test showed a high sugar tolerance. Sellar roentgenograms were normal. The blood was normal. During a period of amenorrhea there was no accumulation of estrogenic substance in the blood. A urine test was not performed, as this was in 1929. The patient was observed for the next two and one-half years without any treatment. Menstruation has become normal and she has given birth to a normal child.

J. F., a girl, aged 17½ years, had never menstruated. Her sister menstruated at the age of 12. There was a slight indication of eunuchoidism. The basal metabolism was minus 12 per cent. The patient was distinctly overweight. After three months' observation, menstruation set in and has remained normal.

A. R., a girl, aged 15 years, referred to us because of a possible basophilic adenoma, was markedly overweight. There was definite prognathism. The shoulders were heavy. There

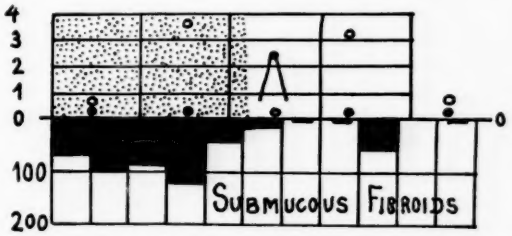


Fig. 12.—Menometrorrhagia due to fibroids. No sign of ovarian overfunction.

was a slight dorsocervical kyphosis. There was diffuse sparse hirsutism and escutcheon. The sella turcica was normal. There were moderate striae on the abdomen. The sugar tolerance was normal. There was early closure of the epiphyses (like 18 years). The basal metabolism was minus 3 per cent. No treatment was given except reduction in weight. After 30 pounds (13.6 Kg.) was lost, normal menstruation began and has continued.

E. H., a woman, aged 29, unmarried, had had menses since she was 13½ years old. Amenorrhea had been present for one year. There was hirsutism. The blood count was normal. The basal metabolism was minus 8 per cent. The genital tract, the sella turcica and the weight were normal. The patient bled after the first interview and has continued to menstruate since then.

E. M., a girl, aged 15½ years, has eight normal sisters and brothers. She has frequent temporal headaches. The patient was 4 feet 7 inches (139.7 cm.) tall and weighed 66 pounds (29.9 Kg.), normal 110 pounds (49.9 Kg.). There was no axillary hair, and only a few sparse pubic hairs. The breast development was that of a girl from 5 to 6 years of age. The uterus was extremely small. The basal metabolism was plus 19 and plus 38. Roentgenograms of the sella were negative and of the long bones showed no delay of development or epiphyseal union. The patient was put on increased nourishment and began to menstruate normally after five months.

R. L., married, had had amenorrhea and been sterile for five years. When first seen she was found three months pregnant and was delivered at term.

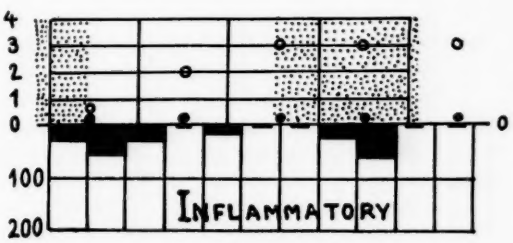


Fig. 13.—Menorrhagia and metrorrhagia due to pelvic inflammation. No sign of ovarian overfunction.

L. P., aged 32, had one child, aged 17 years. The patient was obese and showed hirsutism, general and of the face. She had had amenorrhea for one year. The basal metabolism was minus 12. The sugar tolerance and blood count were normal. She was abdominous and had short arms and legs.

The patient received various estrogenic substances during 1927. During 1928 she lost considerable weight, but the long periods of amenorrhea continued. In 1931 she became pregnant and was delivered of a full term child in August 1932. She was delivered of another child in October 1933.

These few cases, selected out of many, illustrate the spontaneous recovery from obscure endocrine conditions, which in some of these patients appeared grave. We must again emphasize that, had any medication been given, these spontaneous cures would have been ascribed to the treatment. This type of case should act as a full reply to the numerous questions put to us as to how to explain almost miraculous results from various treatments in isolated cases, because every physician encounters surprising response to "therapy" in isolated instances. Unless one is extremely critical, the results so often accidental are regularly ascribed to the therapy.

In marked contrast to the foregoing, a few cases in which futile attempts at therapy were practiced are worth quoting. Some were based on carelessness and incompleteness of diagnosis. Others may be ascribed to the extreme optimism shown by many physicians:

M. C., aged 31, had been subjected to supravaginal hysterectomy for fibroids. This rather stupid patient consulted a physician, who found out that she no longer menstruated and thereupon gave her a long series of injections of Amniotin, in the form of estrogenic substance, "to bring back the menses."

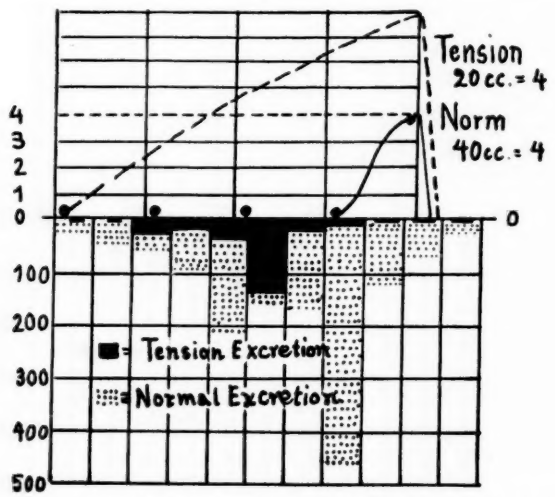


Fig. 14.—Contrasting "premenstrual tension" and normal function. Normal estrogenic substance in blood shown by solid line; "tension" estrogenic substance in broken line. Tension shows increased estrogenic substance in blood. Decreased excretion 300 mouse units (solid blocks) compared to that of normal female (1,500 mouse units).

A young woman, aged 20, came to our endocrine clinic complaining of primary amenorrhea. She had been given a long course of anterior pituitary-like principle from the urine of pregnancy and theelin by various private physicians without result. Pelvic examination showed absence of the vagina.

A. B., aged 29, unmarried, complained of increase in weight and amenorrhea for the last eight months. She had been treated for obesity by diet and dinitrophenol, and had also been given thyroid extract. On examination this patient was found seven months pregnant.

Let these few cases suffice in showing to what extent "hormone therapy" is practiced without proper criteria.

"ESTROGENIC" SUBSTANCES

Endocrine Remedies.—Needless to say, we have tested out both in the laboratory and in the clinic the usual endocrine products as they become available. Until quite recently all the remedies taken by mouth contained no active principle whatever.

Within the last few years, the estrogenic substance in considerable concentration has become available in tablet form, as for example Progynon tablets, or in "pessaries" for vaginal absorption, in Amniotin pessaries.

For hypodermic injection, the estrogenic substance is dispensed under the name of theelin, Amniotin, Progynon, Menformon, and the like, and can be obtained in strengths varying from 150 to 1,000 mouse units per cubic centimeter, in remarkably pure form. Such a preparation certainly appears attractive. In our clinic it has been used on considerable groups of patients for amenorrhea, oligomenorrhea, excessive bleeding and the symptoms of the menopause. In none of these conditions have we found it of real and convincing value.

Our studies on animals have shown that when as much as 20,000 mouse units of estrogenic substance is injected into the circulation of a castrated rabbit, the hormone disappears from the circulation within half an hour. When such an animal is killed twenty-four hours later and its tissues are completely extracted, barely a trace of estrogenic substance can be recovered.

In two instances, female volunteers submitted to the injection of large doses of estrogenic substance. One was a fertile menstruating woman in whom no increase of excretion could be noted during a month, although the injections were spaced at weekly intervals. In the other, a markedly asthenic young woman, amenorrheic for two years, about one fifth of the total injected dose (40,000 mouse units) was eventually recovered from the urine.

Our clinical and animal results are discouraging. We feel confident that to produce an actual menstruation in the castrated human female will require the 250,000 mouse units that Clauberg [20] found necessary to employ and then that no benefit will accrue to the patient.

Were we inclined to use this therapy in functional amenorrhea, after serious endocrine diseases such as pituitary tumors had been excluded, we would give a total of 15,000 mouse units divided in three doses, injected every other day during one week. These injections would then be repeated at intervals of five to six and seven weeks, in the hope thus to strike a time at which follicular growth was actually occurring and the therapy prove an adjuvant to the normal but subthreshold cycle. However, it should be kept in mind that conclusive experiments have shown [23] that continued high dosage of estrogenic substance has a distinctly sclerosing effect on the ovaries. The permanence of this unwished for effect has as yet not been fully determined.

We agree fully, therefore, with the opinion expressed in the admirable summary issued by the Council on Pharmacy and Chemistry.[24]

Anterior Pituitary Hormone.—The true anterior pituitary hormone has not as yet been isolated in such a form as to be available for therapeutic use.

As a substitute, the anterior pituitary-like hormone obtained from the urine of pregnant women and dispensed under the form of Antuitrin-S, Follutein, Prolan, and the like has been extensively employed.

Laboratory investigation has shown that the anterior pituitary-like hormone (it is denominated prepituitary-like because in the absence of the pituitary in the test animal the prepituitary-like hormone does not exert a full effect) produces ovulation and corpus luteum formation, particularly in rodents. Unfortunately, as the studies of Geist [25] have shown, the effects on the human being are distinctly different, even when huge doses are given. This investigator found that in the human being some interstitial bleeding into the ovarian stroma and some increase in theca cell luteinization took place. Just what physiologic effects are produced by this change, he was as yet unable to determine. Clinically no effect could be noted.

23. Kunde, M. M.; D'Amour, F. E.; Gustavson, R. G., and Carlson, A. J.: Effect of Estrin Injections on Reproductive Organs, Hypophysis, Kidney, Adrenals, Thyroid and Blood Vascular System, Proc. Soc. Exper. Biol. & Med. **28:** 122 (Nov.) 1930.

24. Estrogenic Substances: Theelin, Council on Pharmacy and Chemistry, J. A. M. A. **100:** 1331 (April 29) 1933.

25. Geist, S. H.: Reaction of the Mature Human Ovary to Antuitrin-S, Am. J. Obst. & Gynec. **26:** 588 (Oct.) 1933.

Although much lauded in the literature (Novak and others), our own experience with prepituitary-like hormone has been unsuccessful in functional bleedings. This is readily understood when we are once aware that the expected corpus luteum formation, which at best should not produce more than what is called "dumb rut" in animals, does not result.

Various other endocrine constituents have been tried by us in gynecologic diseases. Our experiences with insulin and parathyroid extract have been quite unconvincing and have been discontinued.

RECOMMENDED METHODS OF TREATMENT

Underfunctioning Ovaries.—Those amenorrheas due to obesity, asthenia or depressed thyroid function usually respond promptly to treatment. The obesities require strict limitation of carbohydrates and fats, with a sufficient amount of protein to keep up strength and energy. We recommend slow but continuous loss of weight, at the rate of 1 pound a week, until the normal weight has been reached.

Such a diet requires minute instruction, a detailed dietary and occasional encouragement at personal interviews. The asthenic patients, a less numerous group, likewise require stressing of the protein factor of the diet but in addition sufficient carbohydrates and fats. The patients whose thyroid function is definitely reduced (minus 15 or lower) usually respond very promptly to thyroid medication. We find no advantage in giving thyroxine, usually employing the desiccated thyroid substance. Every eight to twelve weeks a basal metabolism test should be taken.

With the exception of these three types of patients, our therapy in amenorrhea as well as in sterility has not shown the slightest results. We exclude deliberately the spontaneous recoveries that are so frequently accepted as therapeutic triumphs.

It is quite possible that the amenorrheas and sterilities due to underfunction of the ovaries may respond to anterior pituitary medication when this becomes available. The giving of "estrogenic" substances appears entirely illusory and at best even in the highest dosage could bring about only a single anovular "menstruation."

Dysmenorrheic patients are best relieved by putting them into good condition. This applies especially to the asthenic group.

In addition, a combination of small doses of codeine with coal tars, as for example codeine, one-fourth grain (0.016 Gm.), amidopyrine, acetphenetidin and acetylsalicylic acid, 2 grains (0.13 Gm.) of each, may be repeatedly given during the time that pain is felt. At the same time one or more doses of $\frac{1}{200}$ grain (0.0003 Gm.) of atropine may be given by mouth until dryness of the throat is noted. None of the many other methods of treatment recommended, such as operations on the cervix (Dudley, Pozzi, Blair Bell), nor the many antispasmodics lauded for these complaints, have shown any effect. Occasional dilation, without curettage, gives temporary relief over the next few succeeding periods. Twice in the experience of the senior author has it been necessary to induce permanent amenorrhea (once many years ago by double oophorectomy, once by roentgen sterilization) because of the incapacitating suffering. Morphine should never be given to these patients.

The Menopause.—From our hormone studies we realize that the menopause, even when the symptoms are alike, may show entirely different humoral conditions. None of the recommended endocrine preparations, either estrogenic or gonadotropic, have proved effective. Reassurance, long continued use of mild sedatives such as bromides and phenobarbital, hot alcohol rubs and occasional small doses of ergot, from 3 to 5 drops three times a day for two or three days, intermitted for a week, have shown the most satisfactory effect.

Overfunction of the Ovaries.—Premature puberty, if due to so-called essential causes, requires no treatment. When it results from ovarian tumors, these must be removed. We have encountered no premature sexual maturity due to pineal growths.

The puberty bleedings require long-continued care. When first seen in a condition of marked anemia (hemoglobin from 25 to 30 per cent) transfusion is indicated. Today chief reliance is placed on the moccasin venom treatment devised by Peck,[26] which, if long continued, regularly controls these bleedings. Occasionally curettage, in order to give temporary relief of the bleeding, may have to be practiced. After these patients reach the sixteenth, seventeenth or twentieth year, they one and all become normal.

The Functional Bleedings of Maturity.—It is important first to rule out organic lesions, which is not always easy. The gonadotropic hormones, frequently lauded for these complaints, in our hands have proved ineffective, which, considering the fact that if active they should further stimulate the already overacting ovaries, is not surprising. These patients require treatment along strictly gynecologic lines.

In the milder troubles, bed rest, ice bags or short hot douches may be tried. Next, thorough curettage is indicated. If this brings only temporary relief, we have repeatedly, even during the child-bearing age, reduced the functioning of the ovaries with carefully applied x-rays, which in the hands of the expert can be accurately graduated to produce reduction of bleeding, oligomenorrhea or amenorrhea as desired, in women below 35 years of age. A number of these women have later borne normal children.

The preclimacteric bleedings that appear on the same basis as the puberty bleedings, namely, overfunction, should be treated by curettage; and, as these patients are approaching the menopause, no hesitation need be felt in using sterilizing doses of x-rays.

Premenstrual Tension.—In this comparatively small but clear-cut group, relief can be obtained by giving a saline cathartic a week or more before the anticipated menses, at the time that the "tension" is most annoying. After, for example, a bottle of magnesium citrate is taken, no fluids must be ingested until the bowels have moved freely at least twice. Then for the next few hours the patient should drink large quantities of water, tea or coffee. A surprising degree of well being results from this simple treatment.

SUMMARY

Quantitative hormone studies show the humoral status before and at puberty, during maturity and after the menopause.

Functional genital disturbances are of two types—underfunction and overfunction.

Both types are primarily due to disturbances of the anterior pituitary cycle, the ovarian cycle being secondarily affected.

Emphasis is placed on the accurate "size up" of the individual studied and on other laboratory aids which help in the recognition and evaluation of congenital and acquired endocrine stigmas.

26. Peck, S. M., and Goldberger, M. A.: The Treatment of Uterine Bleeding with Snake Venom, Am. J. Obst. & Gynec. **25**: 887 (June) 1933.

Examples of spontaneous recovery without treatment are featured, as, in our opinion, they account for the majority of successes currently ascribed to endocrine therapy in functional genital disturbances of the female.

10 East Eighty-Fifth Street.

A NEW TREATMENT OF TRAUMATIC DERMAL MYIASIS

M. A. STEWART, PH.D.
AND
A. N. BOYD, M.D.
HOUSTON, TEXAS

Myiasis is defined as the invasion of any part of the body of man or animals by dipterous larvae (fly maggots). Traumatic dermal myiasis is the invasion of wounds or ulcers of the skin by these larvae. Maggots invading skin wounds and ulcers will also penetrate into the underlying exposed tissues. The presence of these organisms accentuates the putrid condition of the sores and the suffering of the patient and, not infrequently, considerable quantities of tissue may be destroyed by their feeding activities.

One of the earliest published references to traumatic dermal myiasis was that of Joseph [1] in 1800, and a large number of similar observations have been published since then, especially by medical practitioners and investigators in the warmer regions of the globe. Traumatic dermal myiasis is of common occurrence in the southern part of the United States. However, entirely too often it is not accurately diagnosed, especially when the maggots are deeply embedded. When it is noticed, frequently only a small number of larvae, those on or close to the surface, are removed, the others remaining undiscovered and thereby escaping treatment and subsequent removal.

Usually the treatment of this type of myiasis is very briefly described in medical textbooks with the information that the infested wounds are treated with antiseptic douches, the larvae being subsequently removed with appropriate instruments, after which an antiseptic dressing is applied. Actually, a number of different treatments for this condition are widely used. One of the most highly recommended of them, and the one that has been the most satisfactory thus far, is irrigation of the wound with 20 per cent chloroform in sweet cow's milk. The fat in the milk tends to stifle the embedded larvae, which consequently attempt to leave the wound and in so doing are killed by the chloroform. They are then removed with forceps and the wound is dressed with an antiseptic dressing. Some of the other more commonly used methods of treatment are surgical removal of the maggots, and douching or irrigating the infested wound with chloroform, benzene, infusion of pyrethrum, turpentine, 2 per cent phenol (carbolic acid) infusion of basil (Ocymum basilic) and even salt water. Following such irrigations the wound is washed with luke warm water and an antiseptic dressing is applied.

A year and a half ago, during our term of service in the orthopedic division of the Jefferson Davis Hospital of Houston, Texas, cases of traumatic dermal myiasis were seen from time to time, and being dissatisfied with the milk-chloroform treatment, because the preparation had to be made up fresh for each treatment and because from two to four treatments were usually necessary for each case, we made an attempt to find some more satisfactory method.

In the search for a new douche the following requirements were kept in mind: a substance that would cause the maggots to leave the deeper portions of the wound and that would kill them before they could completely escape; a substance that could be made up in quantity and would remain stable over a considerable period of time, and a substance that would have a soothing effect on the wound.

After considerable experimentation a satisfactory diluent, or vehicle, for the chloroform was found in light vegetable oil; any light oil of vegetable origin seems to be equally effective. In this substance the chloroform is entirely soluble, whereas in milk it is practically insoluble. Milk contains about 87 per cent water, and chloroform is so slightly soluble in water that only 0.66 Gm. will dissolve in 100 cc. of water at 22 C. If kept in a closed container, the chloroform-vegetable oil solution will keep indefinitely. When applied to a wound, the oil in the solution has a very soothing effect on the raw tissue. Owing to the solubility of chloroform in vegetable oil, only 15 per cent chloroform need be added to the diluent instead of 20 per cent, as when milk is employed in this capacity.

Seventeen cases of traumatic dermal myiasis have been treated with this mixture in the following way: When the infestation is on an extremity so that the entire part can be submersed in a vessel containing the chloroform-vegetable oil solution, this is done for thirty minutes; but when such a procedure is not possible the wound is kept flooded with the substance for the same length of time. In the latter event such flooding can be facilitated by first douching the cavity of the wound and then placing a flat gauze dressing over the wound and keeping it saturated with the douche. At the end of thirty minutes the dead maggots can be picked off the surface of the wound or out of the flat dressing, as the case may be, and the wound is dressed with a sterile bandage. In every case tested, all the larvae were removed from the wound in a single treatment, which is rarely the case when chloroform and sweet milk are used. In thirteen of these cases so treated, maggots were reared and the adults were identified as Texas screw-worm flies (Cochliomyia macellaria Fabr.).

This method has been employed to remove "surgical maggots" that have been placed in osteomyelitis for therapeutic purposes, with equally good results.

SUMMARY

A new douche, composed of 15 per cent chloroform in light vegetable oil, has been employed in the treatment of seventeen cases of traumatic dermal myiasis. In every case all the maggots were removed with a single treatment, extending over a period of thirty minutes; such results are very rare when 20 per cent chloroform in sweet cow's milk is used.

The new douche has further advantages over the commonly used chloroform-milk solution in that chloroform is entirely soluble in vegetable oil and only slightly soluble in milk; in that the chloroform-vegetable oil solution is very stable and can be kept indefinitely in closed containers, whereas the chloroform-milk mixture has to be made up fresh for each application, and in that the vegetable oil is very soothing to the raw tissue of the infested wound.

From the Rice Institute.

1. Joseph: Myiasis Externa Dermatosa, Hamburg, 1800.

ADOPTION PRACTICES AND THE PHYSICIAN

R. L. JENKINS, M.D.
CHICAGO

In this article adoption is considered in its purely human aspects as it concerns the medical profession. The relation of adoption to legal inheritance is beyond its province.

It is generally conceded that there is no social institution that can be regarded as an adequate substitute for the home in the training and socialization of children. There was a time when the inability of parents to support their children was considered a sufficient reason for the placement of the children outside the home. What such a policy would mean during the present crisis of unemployment must be apparent to all. There is a general agreement at present that, in instances in which it is necessary, children are best safeguarded by the conservation of the home through relief or social case work, with the exception of that small minority of instances in which the home is unfit.

There are certain children whose parents are dead, insane, feebleminded, invalided, or otherwise unfit or unavailable for whom this solution is impossible. There is also the problem of the children of illegitimate unions and the community attitude which stigmatizes the unmarried mother and the bastard child. In the instances in which for certain reasons a child's own home is unavailable for its nurture, the first consideration should be the possibility of substituting another family home for the one it has lost.

Haste in the separation of an illegitimate child from its mother is rarely a virtue. In the pressure and turmoil following the birth of an illegitimate child an unmarried mother may give consent to its adoption and may deeply regret her consent a year or two later when she may be in a position to care for the child. The careful mustering of available resources during the pregnancy may prevent precipitate and probably permanent separation of the mother and child. Immediately after the birth of an illegitimate child the barriers to the care of the child within the family may seem immeasureably high to the mother, yet the solution may not be difficult later.

The interest of the child and of the community (the two are commonly identical) should be considered paramount in the placement of children for adoption. The interests of the adoptive parents and of the original parents, while worthy of consideration, are secondary to these. The problem of placement for adoption is the problem of the selection of the most suitable home available for a given child.

The problems of adoption practice are so interwoven that they do not readily lend themselves to formally organized discussion. In this paper an attempt will be made to consider the adoption procedure under the headings "Investigation of the Home," "Investigation of the Child," "Individualization of Placement" and "The Probationary Period." Some overlapping of discussion can scarcely be avoided.

INVESTIGATION OF THE HOME

The responsibility involved in placing a child in an adoptive home is a grave one. The child is defenseless, and the power of the adoptive parents is almost unrestricted. The placement will determine the future course of the life of the child.

The adoption of a child, like other human acts, proceeds from a motive. The motive at times may be but dimly recognized by the prospective parents. Children are adopted to fill a need or to serve a purpose in the lives of those who adopt them. In judging the suitability of prospective adoptive parents, an estimate of the motive for desiring a child is essential. An attempt should be made to judge the probable effect on the child of the emotional attitudes indicated by this motive. Sometimes the adoption of a child is sought from a motive that is grossly improper, as in the following:

> The widow of a wealthy man, in order to receive a large share of his estate, secured a child and pretended that it was the posthumous child of her deceased husband. Another case found during the investigation illustrates how children secured from doctors, hospitals, and individuals are used in dishonest schemes. A woman lived with a man who was not her husband. The man was killed in a railroad accident. The woman came to Chicago and secured a child from ——— hospital for the purpose of proving that the child was the heir. At the time the child was discovered, this woman was living with another man to whom she was not married. The baby, in a neglected condition, was removed from this woman's home to a hospital. The mother of the child was afterward found. She said that she had paid the hospital for disposing of the child. As the mother herself was unable to care for the child it was turned over to the Catholic Home Finding Association. This society placed it in a good home for adoption, after the family had been thoroughly investigated.[1]

More frequent, more subtle to detect, but scarcely less dangerous to the child are the many instances in which the motive of the adoptive parents deviates less obviously from ethical standards, as in the following:

> CASE 1.—A., a boy, was adopted from an orphanage when he was between 13 and 14 months old. The adoptive father had long wanted a son. The couple had a daughter of the same age as the adoptive child, and the adoptive mother believed she was not capable of bearing any more children. The adoptive mother thought that if they would take a boy in to board perhaps her husband would be "different," less quarrelsome and sarcastic, and would be easier to get along with. Her husband suggested that they adopt a child outright. The adoptive mother visited an orphanage armed with a letter from a state's deputy. She was given the child without investigation, information about the child, or follow up. The disharmony between the parents increased. The adoptive father became a habitual drunkard, was divorced by his wife, and was finally taken to a psychopathic hospital where a classification of chronic alcoholism with deterioration was made, and he was adjudged insane. The adoptive mother remarried. A. was referred to the institute at the age of 13. The problems presented at this time were unmanageability at home, resentment of his step-adoptive-father's discipline, stealing, and an episode of serving as a screen for a professional thief. He was very restless and had no friends.

The following case also exemplifies the adoption of a child for ulterior motives, and incidentally the placement of a child unsuitable for adoption:

> CASE 2.—B., a girl, aged 22 months, was adopted from an orphanage. The adoption was carried out on the insistence of the father's employer, who thought it was "just the thing for the family." The adoptive father urged it on his wife, thinking it would "give him a permanent position." B. was the youngest of five children. Her father, who came from a demoralized rural family of low mentality, liberally besprinkled with alcoholism, feeblemindedness and illegitimacy, deserted his wife and children. The mother was refused aid by the charities

Studies from the Institute for Juvenile Research, Chicago, Series C, No. 250.

1. Baby Farms in Chicago, Juvenile Protective Association.

because of alleged immorality, and was referred to the juvenile court. One of the children, a girl, was found to have gonorrhea and was treated, cured, and committed to a child-placing agency. The remainder of the children were committed to the care of the orphanage from which B. was obtained. B. was referred to the institute by the adoptive mother at the age of 6 because of failure of school progress. The adoptive mother was high strung and nervous, and wished to be rid of the child. A child protective agency had received complaint that she abused her. The psychometric examination of B. revealed a mental age of 3 years and 10 months on the Stanford-Binet, giving an intelligence quotient of 58; classification, feebleminded. The child was affected with a mild degree of stuttering and infantile mispronunciation. The adoptive parents sought to return the child to the orphanage and succeeded in returning her to her natural mother. The latter desired to resume legal custody by adoption. This is possible in Illinois only by the joint petition of the husband and wife. The whereabouts of her husband are unknown. She sought to avoid this requirement through a divorce but has not had the funds necessary for court costs. The adoptive parents, who have no interest in the child, remain her legal guardians with full parental authority, although she is under the actual care of her natural mother.

Perhaps the crucial criterion is the ability of the parents to see in the child something more than a satisfaction of their own needs: the ability to recognize in the child a separate personality, with needs of its own. While some desire to relive through the child is perhaps usually present in, and normal to, parent-child relationships, prospective adoptive parents who give the clear and immediate evidence of a predominant desire to work out their own thwarted ambitions through a child should be considered unfit. On the other hand, a degree of parental pride in the achievements and accomplishments of a child is natural and desirable. It is therefore advisable, so far as possible, to place children with parents who will value the degree of achievement of which the children are capable.

The recognition of motives is often not easy. Prospective adoptive parents may not recognize their own motives in seeking a child, or, recognizing them, they may seek to conceal them. To estimate motives requires an adequate acquaintance with the prospective parents to sense the goals, values and frustrations that determine their attitudes and color their lives. The family physician is in an advantageous position for such an estimate. Of particular importance is the type of family organization in which each of the prospective parents grew up and the attitude he held toward his own parents.

The people who seek children for adoption cannot be assumed to be an average sampling of parents in the community. They differ as a group in being older and in being childless in most instances. In this connection, the rôle of venereal diseases in the production of sterility should not be forgotten.

A couple who have waited for years in the hope of having a child of their own and who are seeking a child for adoption are likely to be overprotective and oversolicitous toward a child that is placed in their home. Such a situation is not conducive to the development of good character. The position of such a child is an exaggeration of the usual position of an only child. Whereas the placement of a child in such a home may be of value to the parents, it will commonly be damaging to the child, as in the following instance:

CASE 3.—C., a boy, aged 21 months, was referred to the institute by a child-placing agency for a routine examination previous to placement for adoption. The child was the son of a mentally retarded, suggestible Jewish girl and a gentile father, about whom little is known other than that he practiced a skilled trade. C. was in good physical health. Psychometric examination resulted in a mental rating of 20 months; classification, probably slightly below average. There was some doubt as to whether or not the child was doing his best during the examination. Placement, with a view to adoption, in a middle class family was recommended, the adoption to be postponed until after reexamination one year later. The boy was referred for reexamination at the age of 3 years 4 months; intelligence quotient, 108; classification, high average. His adoptive mother, a barren woman who had been an only child but had not received in childhood as much affection as she desired was extremely overprotective, following the child about continually, calling him "lover," and asking his advice about every decision she made. She refused to permit a physical examination, because the child had been recently examined and had created a fuss. The child was, obviously, very much spoiled. The adoptive mother was antagonistic to suggestions that her actions might be overprotective. She was afraid that he would not love his adoptive parents if he learned of his adoption. She wept in speaking of this and said that nothing mattered in her life except the child. It was felt that she would resent and resist any effort to modify her attitude or her behavior toward the child.

The adoptive parents who experience a sense of virtue in fulfilling the physical needs of an orphan child, yet have no appreciation that a child needs affection, may be equally dangerous.

The social investigation of a prospective adoptive home is a task for which a social case worker is fitted by training. It is desirable that the responsibility for this portion of the adoption procedure be undertaken by social agencies that are properly equipped to handle it. In almost every state, even in the rural communities, such service is available, through either a state or a private agency.

The physician who has a broad understanding of people and their attitudes may nevertheless be invaluable in the estimation of the suitability of an adoptive home. Physicians are often called on by child-placing agencies to provide information about homes with which they are familiar. In this rôle the physician should give heed to the personalities and any apparent personality defects of the prospective parents with consideration of their probable effect on a child. Of great importance is the adjustment of the parents to each other. In the home in which there is a conflict between the parents, the child is often used as a pawn in the contest and suffers accordingly. Without a reasonable agreement between the parents on methods of training, the proper training of a child is usually impossible. It is important that the parents have, or be capable of developing, an understanding of children and of what may be reasonably expected of a child. It should be remembered that an assumed attitude will not hold up under stress. Homes in which both parents do not desire the adoption are usually unsatisfactory.

It is necessary that the adoptive parents have not only the will but also the power to give the child a fit home. This involves, in the first place, a state of reasonable health and a reasonable expectancy of a healthy life until the period when the child may be expected to become independent. Obviously a child should not be placed in a home in which either parent is suffering from open tuberculosis or is in an infectious condition with a venereal disease. It is not the custom of most child-placing agencies to require real evidence of the physical fitness of the prospective parents. Considerations of humanity would suggest that the community should demand, before the placement of a child in an adoptive home, at least that degree of investigation of the physical fitness of the parents that a life insurance

company would demand before risking its money. Mental deficiency, drug addiction, epilepsy, alcoholism, or any chronic and incapacitating disease should be considered as disqualifying an adoptive parent. It would seem that the adoption of children should be denied prospective parents who have at any time been insane.

It is, of course, further a prerequisite that the prospective adoptive parents be capable of providing the child with the necessities of life, and with educational and other advantages more or less commensurate with the standards of the community in which they live. Certain child-placing agencies require that adoptive parents have or take out an insurance policy for the protection of the child.

If a child is desired for a childless home, serious consideration should be given to the question of whether or not the adoptive parents are apt to have a child of their own. Such an event (filling the need for which the child was adopted) commonly places the adoptive child in a disadvantageous position. In the event that the adopted child displays jealousy of the natural child, or in the event that rivalry develops between them or that the level of behavior or accomplishment of the adopted child is less favorable than that of the natural child, the most broad-minded parents may find it difficult to avoid partiality toward the latter. When the adoption of a child is contemplated by a couple who already have children of comparable age, it is essential that the prospective adoptive child compare not unfavorably with the natural children.

Unmarried, divorced or widowed persons sometimes seek children for adoption. Each case should be considered on its own merits, but with the realization that in general the family set-up is the most successful.

In cases in which the suitability of parents is doubtful or perplexing, there is an advantage in consultation with a psychiatrist experienced in parent-child relationships.

INVESTIGATION OF THE CHILD

Although the interest of the adoptive parent should not be paramount in determining placement, it is apparent that there are obligations to an adoptive parent that should be considered in making a placement. The placement of a mentally defective child for adoption obviously is a grave injustice. It should be recognized that if prospective adoptive parents are not an average sampling of parents in the community, prospective adoptive children probably are even less so. This statement should not be taken to imply that there are not many possible adoptive homes of superior quality nor many children of superior endowment who need placement for adoption. It does imply the need for the exercise of care and caution in placement for adoption, both from the point of view of the child and from the point of view of the parents. Whereas illegitimate children are born to adults in every level and walk of life, feebleminded girls and women in the community are notoriously apt to produce them. The factors that are responsible for the dependency of children are frequently associated with poorer rather than with better heredity; e. g., commitment of a parent to an institution for epileptics.

CASE 4.—D., a boy, aged 4 years, was adopted by his maternal aunt and his uncle by marriage. The elopement and marriage of his parents, which occurred after a few hours' courtship, was the result of a bet by the father, a shell-shocked ne'er-do-well who rarely worked, that he could "make" the mother, a pretty waitress. The parents separated after the mother was infected with a venereal disease. At the age of 1½ years D. had cerebrospinal meningitis, and he lost the power of speech, which he was beginning to develop. For two to two and one-half years after this illness he was unable to walk and his hearing was impaired. He was referred to the institute at the age of 6 by his adoptive father after he was refused admission to two schools. The neurologic examination was negative except for hyperactive tendon reflexes. The psychometric examination revealed a mental age of 2 years and 8 months, which, with a chronological age of 6 years and 10 months, gave an intelligence quotient of 39; classification, feebleminded, imbecile group. The feeblemindedness was ascribed to his attack of meningitis at 1½ years. He was restless and destructive, suggestible and easily led, given to temper tantrums and screaming. He took delight in torturing animals, practiced coprophagia and smearing, and loved to roll in the mud. He did not talk beyond a few monosyllables. At this time the adoptive parents had a baby girl, aged 5 months, of their own. D. was very friendly and kind to the baby when others were present, but as soon as their backs were turned he would screw up his hands like claws and reach for the baby's neck. Once the baby was almost choked to death before some one happened in on them. The baby was in terror of D. and often got into such a nervous state that the normal functioning of the alimentary tract was interfered with. D.'s adoptive mother was evidently attached to him and was loath to part with him. He was, in appearance, a very attractive child. The adoptive mother was in poor health and was under considerable strain in the protection of the baby from D. Commitment of D. to a state institution for the feebleminded was recommended.

Certain states make legal provision for the annulment of adoption within a specified period; i. e., five years after its completion in event the child proves to be mentally defective or epileptic. In states in which legal provision is made for the annulment of adoption, greater liberality might well be extended in permitting its completion.

No placement for adoption should be permitted until a reasonable effort has been made to ascertain whether the child is suitable for adoption. Such an effort should include the exploration of the family history for hereditary diseases, such as amaurotic family idiocy and Friedreich's ataxia, and for mental deficiency, epilepsy, alcoholism and insanity. An effort should be made to estimate the quality and social competence of the immediate relatives. The developmental history of every child placed for adoption should be scrutinized and, of course, the child should be subjected to a medical examination. Special attention should be paid to the possibility of sensory defects. Serologic tests for syphilis should not be neglected.

The behavior of the child should be noted, with an eye to estimating his aggressiveness or timidity, sociability or seclusiveness, adaptability, emotional stability, response to various measures of control and other characteristics that may be of importance in determining his adjustment in a home. Organizations undertaking placement of children for adoption should furthermore have available the services of an adequately trained clinical psychologist, to insure that feebleminded children shall not be adopted. Caution should be used, however, in giving an unfavorable prognosis with young children of low intelligence quotients who have been in institutions or in homes that have given them little opportunity for development. The intelligence quotient of such children may show an improvement after a period of placement in a good home.

Aside from children who are mentally deficient or epileptic, blind or deaf, there are few who can be considered necessarily and permanently unsuitable for

adoption. There are a number who have physical defects, which, if possible, should be remedied before placement for adoption, or, if this is impossible, of which adoptive parents should be apprised.

INDIVIDUALIZATION OF PLACEMENT

Children are individuals and must be treated as such. A child may make a failure of adjustment in one home and a success in another, yet the first home may be entirely satisfactory for the placement of another child. In considering placement for adoption, an effort should be made to consider how the needs and abilities of the particular child would be met in the home under consideration and how the prospective parents probably would receive and manage the particular faults of the child. An advance judgment, in this regard, though it may often be misleading, will reduce the number of malplacements. A child is best placed with understanding, tolerant but not effusive parents, in a family of an intellectual and cultural level suited to his probable abilities. Consideration is due the nervous stability and usual level of tension of a child. A highly strung child is usually better placed with not too high-strung parents. Consideration of the individual child's need for affection deserves attention.

With older children, the relation between the standards of behavior which they have developed and those of the prospective adoptive home deserve consideration. Recognition is taken in the Illinois law of the need for an individual adjustment of parent and child by the provision that no adoption placement is legal on a child 14 years of age or older without his consent.

An intelligent child should have the advantages and stimulus of placement with parents who have intellectual interests. On the other hand, the placement of a dull child in a home where a superior level of academic and intellectual achievement is expected is commonly a misfortune. The need for care in this matter and the imperfect reliability of intelligence ratings of young children are revealed in the following case:

CASE 5.—E., a girl, aged 3 years, was referred to the institute by a child-placing agency for examination prior to adoption. Her mother was probably feebleminded and her father was unknown. (The husband of the mother was paralyzed and could not have been the father.) The child had been living in very unfavorable surroundings until 2½ years of age, at which time she was placed with prospective adoptive parents. During the psychometric examination the child was frightened and uncooperative. The examiner estimated that her mental age was not equal to 2 years. A provisional diagnosis of feebleminedness was made. It was felt, however, that her retardation might be due to her bad home background and that she might show improvement in a better environment. Reexamination was advised in one year. She was reexamined eight months later. At this time, by mental tests, she graded 3 years, intelligence quotient, 88; classification, dull and backward. Speech was now fairly well developed. She was reexamined at the age of 4 years and 3 months. At this time her Stanford-Binet was 3 years 8 months; intelligence quotient, 86; classification, dull and backward. It was stated at this time that there appeared to be no contraindication to adoption.

She was referred for examination by her adoptive mother at the age of 16, because of school retardation, untruthfulness, and aggressive overinterest in boys. The adoptive parents, who had desired to send her to college, were much distressed because of her school retardation and her lack of studiousness and school interest. Psychometric examination revealed a mental age of 10 years and 2 months, which gave her an intelligence quotient of 68; classification, feebleminded. A physical examination revealed a patent hymen and a moderate amount of purulent discharge. Smears were negative for gonococci. It was felt that a factor in the girl's delinquent behavior was disparity between the ambitions of her adoptive parents and her own ability. She did not measure up even to the minimum requirements of her adoptive mother and lived in an atmosphere of constant criticism. Most of her untruthfulness was an attempt to put on "front." Shortly after this examination the patient was picked up by the police. She had truanted from home, and her adoptive mother refused to take her back. Commitment was arranged to a privately supported training school for delinquent girls.

Children of borderline defective intelligence are not apt to make a good adjustment in the midst of intellectual competition of urban life. They may adjust satisfactorily in simple, tolerant homes where there is little emphasis on school achievement. Such homes are more frequent in rural communities, and these surroundings provide a logical avenue for graduation into self support as a farm hand.

The choice of the age at which a child should be adopted rests between the horns of a dilemma. From the point of view of the nurture of the child it is desirable that placement should occur at as early a date as possible in order that the child may develop a feeling of security with, and of belonging to, his adoptive parents, and in order that his early training may not be disorganized by unnecessary changes of placement. However, it is impossible to avoid some gross malplacements in the policy of adoption in infancy. The policy that seems best calculated to serve the interests of all is that of early placement of children of known background who seem suitable for adoption in the homes which seem the most suitable to them, and the withholding of the transfer of legal responsibility until such time as it becomes reasonably evident that the placement is in fact successful. It should not be assumed, however, that it is always easy to terminate a bad placement.

In the case of children placed so young that an estimate of their intelligence is impossible, it is probably the wisest plan to place them with adoptive parents whose level of intelligence is more or less comparable with that of the natural parents, if they are known.

There are some differences of practice regarding the information concerning the child placed for adoption which is supplied the adoptive parents. It is my belief, in common with most workers who deal with adoption problems, that adoptive parents have a right to know the background of the child for the nurture of which they undertake responsibility; that the withholding of information which might throw into question the suitability of the child for adoption, e. g., idiopathic epilepsy in a parent, is tantamount to fraud. To those who hold this view it seems apparent that an agency does not escape the responsibility for withholding such information through a general policy of noninvestigation.

CASE 6.—F., a boy, was adopted from an orphanage at the age of 2 years. The adoption was completed without investigation of the adoptive home or a study of the child's background. He had been born in an army camp, the third child in the family of a private. The adoptive parents were informed that the mother died of pneumonia when the patient was 1½ years old. The father had deserted. At the age of 8 the child was referred to the institute by his adoptive father because of stealing and lying, with the request for advice as to a school placement where rigorous discipline would be used to "break the inherited trait." F. was found to be underweight, of average intelligence, with a good level of school achievement for his chronological and mental age. It was apparent that the importance of his stealing and lying was being distorted by the adoptive parents. The adoptive mother, an extremely domineer-

ing, violent tempered woman in her third marriage, was inconsistent and unpredictable in her handling of the child. She was very affectionate to her dogs, kissing their mouths and preparing the best food for them. The adoptive father had strict disciplinary ideas and expected immediate obedience to dictatorial orders. The maternal grandmother was an understanding woman but unable adequately to buffer the child, who was in constant fear of his adoptive parents, trembling violently in their presence, and who would admit acts of which he was not guilty when charged with them, because he did not dare to deny them. The adoptive mother in her temper outbursts had threatened to kill F. if her husband did not "get rid of him." The adoptive parents expressed bitterness regarding facts which they learned after the adoption of the child and which they felt the orphanage had concealed from them; viz., that the parents of the child were first cousins and that the mother died not of a primary pneumonia but of tuberculosis. Their conclusion was that the child necessarily would be a mental and physical defective. This hopeless attitude was apparently a factor in their total loss of interest in the child. The child frankly hated and feared his adoptive parents; his first wish was to get away from home; his second, to have enough to eat. The mother openly admitted her dislike for the boy, although she claimed that when she originally took him she was very fond of him. She admitted that she kept him locked up and would not permit him to go to school or play with other children because she was afraid he would steal. The father unhesitatingly admitted his loss of interest in the boy.

If an adoption is decided on, it is desirable, before placement for adoption, that legal responsibility for the child be transferred from the natural parents to a responsible social agency, in order that a satisfactory placement may not be disrupted by the interference of vacillating parents.

THE PROBATIONARY PERIOD

The placement of a child for adoption necessitates a period of adaptation by the child and the adoptive parents. No adoption should be permitted until after a probationary period, which, under ordinary circumstances, should be a year or more, during which there has been evidence of a satisfactory parent-child relationship having been established.

Unfortunately, some child-placing organizations, certain of which have excellent physical equipment and excellent standing in the eyes of the lay and medical public, permit the completion of adoption in infancy when the suitability of the child for adoption cannot be adequately ascertained, the adoption being consummated without a real investigation of the home and without a trial period. Only the failure to make a follow-up study which is characteristic of such organizations conceals the number of malplacements which inevitably result from "over-the-counter" adoption practices.

During the probationary period contact should be maintained with the home, and the success of the placement observed. If, at the end of a fair trial, it is evident that the child is not making a reasonably satisfactory adjustment, or if the effect of the adoptive parents on the life of the child is not a reasonably wholesome one, the placement should be terminated. If the success of the placement is doubtful, the probationary period should be extended. If the placement is judged to be successful and a reexamination of the child reveals it to be suitable for adoption, the adoption should be permitted. In view of the desirability of the child being rooted in the adoptive home as early as possible, and the advantage of the early completion of the adoption in favorable cases, it is recommended that the practice of permitting early adoption be as liberal as is consistent with reasonable caution.

The following practice, based on a consideration of the relative unreliability of intelligence ratings of young children, is recommended as reasonably cautious in regard to the evidence of intellectual adequacy required before the consummation of adoption:

Each child should be tested before and at the completion of the probationary period of one year. It is desirable, particularly with children under 4 years, that each examination should include two tests. The tests should be administered by an adequately trained clinical psychologist.

In cases in which the results of the tests are discrepant with the rough estimation of the child's intelligence from the observation of his behavior, judgment should be withheld until the discrepancy is dissolved.

1. With children, aged 1 year or older, indication of very superior intelligence is adequate for adoption.

2. With children, aged 18 months or older, indication of superior intelligence (intelligence quotient 110 or above) is adequate for adoption.

3. With children, aged 2 years or older, indication of intelligence at or above the presumed mean (intelligence quotient 100 or above) is adequate for adoption.

4. With children, aged 3 years or older, indication of intelligence falling in the grouping "average" or above (intelligence quotient 90 or above) is adequate for adoption.

5. With children, aged 4 years or older, indication of intelligence falling at or above the middle of the grouping "dull and backward" (intelligence quotient 85 or above) is adequate for adoption.

6. With children, aged 5 years or older, indication of intelligence above "borderline defective" (intelligence quotient 80 or above) is adequate for adoption.

Adoptions of children with an intelligence quotient between 70 and 80 are advisable only under circumstances particularly favorable to the adjustment of such children.

In certain cases the foster parents form an attachment for a child placed with them whose development does not justify the recommendation for adoption. In these cases the parents should be frankly advised of the experts' opinions, but it may be considered proper to permit the adoption of the child against advice.

Many adoptive parents seek to conceal from their adoptive children the fact of adoption. The motive for the concealment is apparently the fear that they will not be accepted as parents by the child if it learns of its adoption. If concealment were likely to be successful, the element of deception might be overlooked. Experience indicates, however, that even when the adoptive parents move to another neighborhood or to another city the adopted child, with few, if any, exceptions, ultimately learns of his adoption. The knowledge, usually coming relatively late, from an indirect and sometimes unsympathetic source, often produces an emotional crisis in the child's life, frequently with damaging results. The estrangement of child and parents may take its origin from this crisis, sometimes without recognition by the parents of the cause. The child who has been told of his adoption when young, at the age of 4 or 5, is forearmed against this type of damage. The knowledge need not interfere with the child's sense of security in his parents; indeed, clever parents sometimes capitalize the fact to add to the child's security by pointing out that he was selected because they wanted him especially. It is highly important, in order to avoid future perplexing doubts, that an adopted child be told of his identity and given any possible favorable information about his parents.

Infants and children judged to be unsuitable for adoption may be cared for by boarding-home place-

ment, under the supervision of a suitable child-placing agency, or by institutional placement, as may seem best, depending on the child and the resources available.

SUMMARY

It is the duty of physicians to familiarize themselves with the factors determining good adoption practice and, wherever possible, to cooperate with careful child-placing agencies.

Before placement of a child in adoption is decided on, a canvass should be made of all possible resources for aiding the parents to maintain the child. Adoption should be resorted to only if a satisfactory arrangement of maintaining the child with one or both parents is impossible.

Placement for adoption should not be permitted unless the home, after careful investigation, appears to be suitable. An effort should be made to ascertain the motive prompting the prospective parents to adopt a child. The state of health of the prospective parents should be determined, with especial attention to the detection of tuberculosis and venereal diseases. The personalities and personality defects of the prospective parents should be noted, and their ability to provide a child with the security and advantages usual to the community determined.

No placement for adoption should be permitted unless the child after a careful study appears suitable. Such study should include exploration of the family history when this is possible, review of the developmental history of the child, physical examination, psychologic examination and observation of the child's behavior.

Placement for adoption should be individualized. It is desirable that a child be placed in a home capable of meeting his needs, and of a level of standards suitable to his abilities.

Legal responsibility for the child should be transferred to a suitable social agency before placement for adoption.

No legal adoption should be permitted until a probationary period reveals that a reasonably satisfactory parent-child adjustment has been established and that the child is adjusting in the home, and until reexamination of the child establishes that he is suitable for adoption. The probationary period should ordinarily not be less than a year. In doubtful cases it should be extended.

Children not suitable for adoption may be cared for in boarding homes, under the supervision of suitable child-placing agencies, or in institutions.

907 South Lincoln Street.

Symptoms of Rupture of Intracranial Aneurysm.—The characteristic symptomatology of aneurysms begins when rupture occurs. Premonitory symptoms of an indefinite character may precede rupture for several days. The rupture of the aneurysm is usually manifested by a sudden apoplectic seizure with loss of consciousness, vomiting and sometimes a convulsion. Death may occur at this time. If fatal hemorrhage does not occur, the patient gradually regains consciousness and complains of severe fronto-occipital headache, stiffness of the neck and perhaps pains in the extremities, due to irritation of the meninges by the extravasation of blood into the subarachnoid space. The clinical picture resembles a fulminating septic meningitis. Frequently the focal signs, notably palsy of the third nerve, appear at this time. The preexisting focal signs are increased owing to the formation of a clot around the aneurysm.—Garvey, P. H.: Aneurysms of the Circle of Willis, *Arch. Ophth.* **11**:1132 (June) 1934.

Clinical Notes, Suggestions and New Instruments

CULTIVATION OF THE VIRUS OF LYMPHOGRANULOMA INGUINALE AND ITS USE IN THERAPEUTIC INOCULATION

PRELIMINARY REPORT

JOSEPH T. TAMURA, M.Sc., CINCINNATI

Heretofore, as far as I can learn,[1] attempts to cultivate the etiologic agent of lymphogranuloma inguinale have been failures. I have been successful by utilizing the medium devised by Maitland, Laing and Lyth [2] for the cultivation of vaccinia virus. This medium is made by placing sterile bits of rabbit tissue in Tyrode's solution. I have used guinea-pig tissue instead of rabbit.

METHOD OF CULTIVATION

When pus is removed aseptically from a bubo that has not been exposed to external contamination and is found to be bacteriologically sterile, it is diluted 1 : 5 with sterile saline solution. Now, when from 0.02 to 0.03 cc. of the diluted pus is planted in the Tyrode's solution containing a piece of guinea-pig kidney or liver and incubated at 37.5 C., a peculiar cloudiness appears throughout the supernatant fluid in from thirty-six to forty-eight hours. Control tubes of the medium incubated at the same time remain perfectly clear. This cloudiness can be transmitted from tube to tube and in one instance was carried through twenty-four subcultures, when the procedure was discontinued.

In my experience, as in that of others, cultures made from bubonic pus when planted on a wide variety of bacteriologic mediums and grown aerobically, under partial tension of oxygen, or anaerobically, remain free of visible growth. When the cloudy supernatant fluid in the tissue-Tyrode medium is examined or cultured, nothing resembling ordinary bacteria is to be found. The appearance of the cloudiness is followed by a slow disintegration of the tissue. Such disintegration does not occur in control tubes.

When transfer is made from twelve day old cultures it is successful. In a fourteen day old culture the cloudiness seems to settle out and when the clear supernatant fluid is subcultured it no longer produces cloudiness.

Attempts to see the etiologic agent in cloudy fluid have failed, with the exception that peculiar granules are brought out by Giemsa's stain and these are absent in controls.

While I think I have enough proof that the cloudy culture supernatant fluid contains the etiologic agent, it is interesting to note that pus from three cases failed to produce cloudiness in the medium. However, Frei antigens prepared from the pus in these cases also failed to give positive skin reactions in other proved cases.

Subcultures from a 1 : 10,000 dilution of the pus did not yield growth, but from a 1 : 1,000 dilution did.

FILTRABILITY

When diluted pus or the cloudy supernatant fluid in culture is passed through the Berkefeld N filter, the filtrate will produce cloudiness on subculture.

PATHOGENICITY

When 1 cc. of the cloudy supernatant fluid is inoculated subcutaneously into the groin of a guinea-pig, a lymphadenitis is produced in from two to three days. The glands gradually increase in diameter and in ten or twelve days may measure 15 mm. and the overlying skin becomes adherent to the affected glands, after which they tend to disappear spontaneously. This is comparable to that which one can accomplish by direct inoculation with human pus. Such culture subinoculations have succeeded when the fourth, sixth and eighth subcultures were

The Department of Dermatology cooperated in this work.

From the Department of Bacteriology and Hygiene, University of Cincinnati College of Medicine.

1. Most of the literature has been reviewed recently by Stannus, H. S.: A Sixth Venereal Disease, London, Baillière, Tindall & Cox, 1933.

2. Maitland, H. B.; Laing, A. W., and Lyth, R.: Brit. J. Exper. Path. **13**: 90-96 (Feb.) 1932.

used. The etiologic agent has been passed from culture to guinea-pig, then from guinea-pig to the medium, from this culture to a subculture, and then back to the guinea-pig, as often as four times (to date).

USE OF CULTURE ANTIGEN FOR DIAGNOSIS

The cloudy supernatant fluid from subcultures was heated to 60 C. for two hours on one day and at the same temperature for one hour on the following day as in the well known method of preparing Frei's antigen from pus. When such heated culture antigen preserved with 1:10,000 merthiolate is injected intradermally into patients, it gives just as marked reactions as does the Frei antigen. When the twenty-third subculture in one series was heated for antigen, it was found to be just as active as antigen prepared from earlier subcultures. As in the case with the Frei antigen, the culture antigen gives no reaction in normal individuals.

USE OF CULTURE ANTIGEN FOR TREATMENT

I have nine cases, showing active inguinal manifestation of the disease, under treatment using heated culture antigen as a vaccine administered subcutaneously. Of these, three cases showed such marked improvement that they were considered cured in eight weeks. Accompanying the clinical improvement there was a marked reduction in skin sensitivity. Other cases appear to be following a similar course.

Beneficial therapeutic effects, following the intradermal inoculation of Frei's antigen, has been reported recently by Wien and Perlstein,[3] who refer to the previous work of Hermans and Gay-Prieto.

SUMMARY

When pus from lymphogranuloma inguinale is planted in the tissue-Tyrode medium used by Maitland and his co-workers for the cultivation of vaccinia virus, it becomes cloudy. The etiologic agent produces this cloudiness, which is transmittable in serial cultures, or serial cultures alternating with guinea-pig inoculations. The etiologic agent in pus or cloudy supernatant culture fluid passes the Berkefeld N filter. The heated cultures have been used successfully in making diagnosis by the intradermal skin test and for cure by subcutaneous inoculation therapy.

BITE BY A SNAKE IN A BUNCH OF BANANAS

MARCOS FERNAN-NUNEZ, M.D., MILWAUKEE

The importance of modern rapid transportation methods, such as the airplane, in the transmission of tropical diseases to nontropical lands has been dramatically demonstrated in recent years by the appearance of several exotic diseases in the northern part of the United States.

The following report, demonstrating a similar paradox, illustrates the possibility of being bitten by a tropical snake in the center of a great northern city.

REPORT OF CASE

J. M., a truck driver, was unloading bunches of bananas in Milwaukee, March 5, 1934, when he felt something sting him on the hand. His search revealed a snake, 37 inches (94 cm.) in length, in the bunch of bananas.

I examined the victim thirty-four minutes after the bite and found two small bleeding punctures, 1 cm. apart, on the palmar surface of the middle phalanx of the third finger of the right hand. The finger showed a mottled swelling extending up the hand to the metacarpal region. The pulse rate was 102 and the respiration rate 28. The patient complained of pain in the affected area, with beginning nausea.

A tourniquet was placed just above the elbow (a single-bone extremity) and was tightened enough to cut off the venous return. A fairly deep incision connecting the two puncture wounds allowed free bleeding, which the victim aided by applying vigorous suction by mouth.

An anti-snake-bite serum (Antivenin [Nearctic Crotalidae]-Mulford) was quickly obtained from a nearby wholesale drug house; a dose of 10 cc. was given intravenously and the same amount was administered intramuscularly. One-half hour later 10 cc. of antivenin was given subcutaneously. Whereas this anti-snake-bite serum was prepared against North American vipers, the fact that the tropical snake that had bitten the patient was a member of the viper family led me to reason that the serum would be effective to some extent at least.

For two hours thereafter at intervals of fifteen minutes the tourniquet was released for periods of three minutes each and reapplied 2 inches higher up the extremity each time. This was done to prevent gangrene and to permit the venom to enter the general circulation in such small amounts that it could be readily oxidized.

The pain and swelling gradually disappeared and the patient was practically relieved from the symptoms at the end of six hours. He returned to his work the following day.

COMMENT

It was ascertained that the bananas had been brought from Colombia, where it is the custom to cut the bunches from the trees and lay them on the ground to be picked up later. Often the bunches remain on the ground for several hours during the night. Evidently the snake had entered the bunch in search of mice or other vermin and had secreted itself in the bunch when it was removed to the banana boat.

To my knowledge poisonous snakes have been found in bunches of bananas on five occasions in Milwaukee alone. Three of the snakes were examined and were found to be pit vipers (two Mapanás and one Lancetilla), i. e., having a blind pouch between the eye and the nostril. However, the reported case is the only instance in which a human being was bitten, and it is recorded because it is probable that there will be similar occurrences in the future.

It is a common experience to find nonpoisonous snakes in bunches of bananas. They are usually members of the boa family (boa imperator, or small boa constrictors) which climb the banana trees in search of spiders and small animals and are caught there when the bunch is cut off. They do not have the blind pouch between the eye and the nostril, which characterizes the pit vipers, and they are gray with spots on the back. Since their fangs are not perforated and are located in the back of the mouth they have no efficient mechanism for injecting venom and are not dangerous. However, they are vicious at times and can inflict a painful bite.

561 North Fifteenth Street.

FIBROMA OF VAGINA RESEMBLING CYSTOCELE

HAMLIN MATTSON, M.D., MINNEAPOLIS

Soft fibromas are found especially in the skin and mucous membranes. About 200 cases of fibromyoma of the vagina have been reported.[1] Such tumors may occur at any age, though usually they are found between the ages of 20 and 50 years.[2] They are situated usually in the midline, and four out of five are in the anterior wall, it has been estimated.[3] Such tumors exhibit central expansive growth, rarely attain more than moderate size and rarely become malignant. The blood vessels supplying such tumors grow out from the capillaries of the surrounding normal tissue.[4] Hence the tumor tissue is prone to degeneration, softening and ulceration. Because of such characteristics it is possible that tumors of this type are assumed to be cystoceles and rectoceles and are overlooked more often than has hitherto been suspected. Werner[3] and more recently Downing[5] have pointed out the similarity of the presenting evidence.

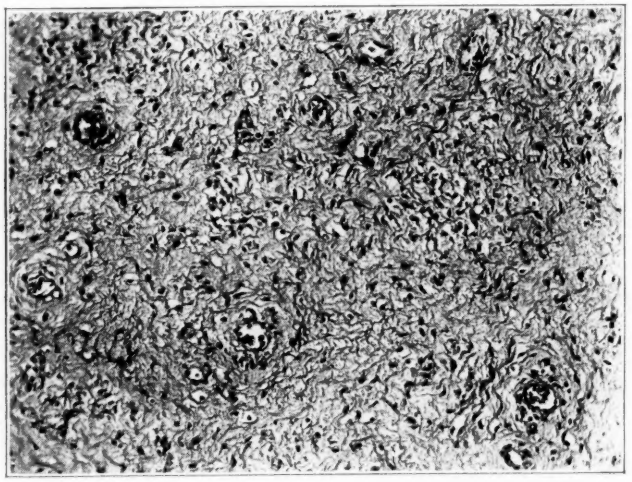
3. Wien, M. S., and Perlstein, Minnie O.: Intradermal Treatment of Lymphogranuloma Inguinale, Arch. Dermat. Syph. 1933, **28**: 42 (July) 1933.

From the Marquette University School of Medicine.

1. Graves, W. P.: Gynecology, ed. 4, Philadelphia and London, W. B. Saunders Company, 1928, p. 333.
2. Curtis, A. H.: Obstetrics and Gynecology, Philadelphia and London, W. B. Saunders Company, **3**: 576, 1933.
3. Werner, E.: Two Cases of Myoma in the Vesicovaginal and Urethrovaginal Septum, Zentralbl. f. Gynäk. **40**: 698-702, 1916.
4. Bell, E. T.: Textbook of Pathology, ed. 1, Philadelphia, Lea & Febiger, 1930, p. 173.
5. Downing, Wendell: Anterior Colpocele Due to Fibromyoma, J. A. M. A. **98**: 1157-1158 (April 2) 1932.

An instance of soft fibroma of the vagina that resembled cystocele in a nulliparous woman, F. J., is here presented.

F. J., a woman, aged 31, single, a nullipara, seen Jan. 18, 1931, complained that intermittently for twelve years she had been bothered by a feeling of weight in the vagina. Such a sensation would be felt for three or four hours at intervals of from four to six weeks, especially when fatigued, after severe exertion or at menstruation. After three or four hours she would feel normal again. Micturition was not disturbed. She had no other complaints. The difficulty had been thought to be due to cystocele. There was nothing significant in the family or menstrual history. She had neuromuscular pains at the age of 16. A tonsillectomy was performed in 1918, though she has experienced more frequent sore throats since that procedure. The appendix was removed in 1920. In March 1929 she sustained a fall, following which she was unconscious. Since the onset of menstruation she had noticed a moderate leukorrhea, though not enough to wear a pad.



Section of soft fibroma of the vagina showing small branched connective tissue cells with some connective tissue fibers in an abundant homogeneous matrix. Slightly reduced from a photomicrograph with a magnification of 125 diameters. Hematoxylin and eosin stain.

The anterior wall of the vagina protruded at the introitus and when the labia were separated the appearance was typical of a cystocele graded 2 on the basis of 4. The aspects on palpation were similar to those of cystocele with the urinary bladder empty. When the bladder was distended a soft mass could be felt at the site of the protrusion, and on cystoscopic examination a hillock presented instead of the depression of a cystocele. The cervix was definitely cystic; otherwise the pelvic examination was negative. Macromastia, graded 2 on a basis of 4, was present. Urinalysis showed 4 pus cells in the high dry field after centrifugation for three minutes. Otherwise the urine was normal on routine examination. There were 4,500,000 red blood cells and 12,000 white blood cells in each cubic millimeter of blood. The concentration of hemoglobin was 12.8 Gm. (normal 16) for each hundred cubic centimeters of blood. The blood pressure, pulse and temperature were normal.

A urethral catheter was inserted as a guide, and January 18, a rounded tumor was nucleated by blunt dissection through an elliptic incision in the anterior vaginal wall. The procedure was carried out under spinal anesthesia and was uneventful. The function of the bladder was not disturbed. A retention catheter was kept in for five days.

The tumor measured 5 by 3.5 cm. and weighed 20 Gm. It was soft and gray, and grossly it had the uniform consistency throughout of whartonian jelly. Dr. E. T. Bell, of the department of pathology of the University of Minnesota, diagnosed soft fibroma. The tumor showed the same microscopic structure in all sections.

Convalescence was uneventful. Feb. 14, 1934, the patient reported that she had felt well since the removal of the tumor.

Medical Arts Building.

CREATINURIA IN ADOLESCENT MALES: II. THE EFFECTS OF THE ORAL ADMINISTRATION OF EPHEDRINE SULPHATE

ARTHUR B. LIGHT, M.D., AND CLARK R. WARREN, A.B.
LAWRENCEVILLE, N. J.

Edgeworth[1] reported the first case of myasthenia gravis in which ephedrine sulphate was used with beneficial results. Since this publication, ephedrine sulphate has at times been employed in conjunction with glycine in the treatment of this disease. Studies of its effects, when used alone, on the creatine excretion in cases of myasthenia gravis have to our knowledge not been made. Reinhold and his associates[2] report a probable case of progressive muscular dystrophy in which ephedrine was used in conjunction with glycine with a resulting definite increase in the twenty-four hour creatine excretion. In this paper are reported the results obtained when ephedrine was administered orally to healthy adolescent males known to excrete creatine. These boys were all students engaged in a similar daily routine of study, exercise and diet during the period of investigation.

METHOD OF INVESTIGATION

The preformed and total creatinine determinations were made according to the methods recorded in our first paper.[3] These analyses were again checked by duplicate determinations of controls to which known quantities of pure creatine in solution had been added. The twenty-four hour urinary collections were carried out as originally reported.

EXPERIMENTAL PROCEDURE

The subjects in these experiments made twenty-four hour collections of urine for three successive days, the first and third days serving as controls. On the second day each subject received ephedrine sulphate. In order to offset any effects of exercise, the first capsule containing 25 mg. was given half an hour before rising (6:30 a. m.). Additional capsules were given at 10:30 a. m. and 2:30, 4:30 and 8:30 p. m., making a total of 100 mg. during the twenty-four hour period. The capsule at 8:30 p. m. was omitted in the last three subjects.

It was noted that without exception the administration of ephedrine sulphate was accompanied by a complete disappearance

Twenty-Four Hour Creatine Excretion Following Administration of Ephedrine Sulphate

		First Day Control			Second Day Ephedrine Given			Third Day Control		
Subject	Age Period	Urinary Volume, Cc.	Preformed Creatinine, Mg.	Creatine, Mg.	Urinary Volume, Cc.	Preformed Creatinine, Mg.	Creatine, Mg.	Urinary Volume, Cc.	Preformed Creatinine, Mg.	Creatine, Mg.
1	16-17	1,940	1,510	49	1,860	1,540	1	1,980	1,515	37
2	14-15	1,380	1,202	38	1,410	1,307	1	705	1,260	28
3	12-13	1,190	1,138	103	545	1,060	2	595	960	40
4	14-15	920	1,048	19	1,100	1,126	5	665	1,131	61
5	13-14	900	953	69	955	1,061	6	995	987	51
6	14-15	640	1,210	47	840	1,200	1	1,190	1,300	90
7	13-14	1,095	906	132	920	962	9	1,115	1,005	70
8	13-14	1,120	1,111	136	936	1,104	4	820	1,072	98
9	14-15	1,450	1,266	45	1,360	1,345	6	1,120	1,432	105
Average		1,182	1,149	71	1,096	1,189	4	1,027	1,188	62

(controls indicate an error of ± 10 mg. of creatine per liter of urine) of creatine from the twenty-four hour specimens when the amounts excreted during the control periods varied from 19 to 136 mg. Two additional subjects not listed in the accompanying table showed the same results, although they failed to make complete urinary collections on one of the control days. On the other hand, no changes in either the average preformed creatinine or the urinary outputs were detected.

From the Medical Department of the Lawrenceville School.

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2. Reinhold, J. G.; Clark, J. H.; Kingsley, G. R.; Custer, R. P., and McConnell, J. W.: Effects of Glycine (Glycocoll) in Muscular Dystrophy, J. A. M. A. **102:** 261 (Jan. 27) 1934.
3. Light, A. B., and Warren, C. R.: J. Biol. Chem. **104:** 121 (Jan.) 1934.

COMMENT

No explanation is at hand to account for this action of ephedrine. The blood pressure and pulse rate of those of our subjects in which these determinations were made were definitely increased. Practically all of them complained of slight headache, a few experienced nervousness and slight weakness, and one subject noted definite nausea. Despite these symptoms, the amount of food taken, particularly the protein intake, remained the same for each day. Three subjects ate all their meals in the infirmary under the direct supervision of the nursing staff. The amount of exercise remained the same on each of the three days.

CONCLUSIONS

The oral administration of 25 mg. of ephedrine sulphate three or four times daily causes a temporary cessation of creatinuria among adolescent males. On the other hand, it exerts practically no influence on the twenty-four hour preformed creatinine and urinary outputs.

Therapeutics

THE THERAPY OF THE COOK COUNTY HOSPITAL

EDITED BY BERNARD FANTUS, M.D.
CHICAGO

NOTE.—*In their elaboration, these articles are submitted to the members of the attending staff of the Cook County Hospital by the director of therapeutics, Dr. Bernard Fantus. The views expressed by various members are incorporated in the final draft prepared for publication. The series of articles will be continued from time to time in these columns.*—ED.

THERAPY OF FURUNCULOSIS

The more severe cases require both local and general treatment. Special methods are indicated in furuncle of the external auditory meatus, of the nares and of the lips.

LOCAL TREATMENT

Abortive treatment, if applied early, may succeed. It consists of: 1. Avoidance of traumatisms, even of the slightest degree, such as pressure and friction from clothing, as well as squeezing. 2. Improving the inflammatory reaction by (*a*) heavy coating with full strength Tincture of Iodine, or (*b*) roentgen irradiation with 180 kilovolts, 300 roentgens, with a filter of 0.25 mm. of copper and 1 mm. of aluminum, at 50 cm. distance and with 30 milliamperes, applied to a rather large field. The two (*a* and *b*) methods must not be combined.

Inevitable suppuration indicates: 1. Epilation of the skin overlying the boil, and the surrounding area, by shaving. 2. Induction of hyperemia and softening by hot boric acid compresses changed every hour or two until there is indication of the place of pointing. A simple alternative treatment, when the hot compress is not available, is application by means of adhesive plaster of a thin disk of soap the size of a thumb nail. 3. Evacuation of the abscess, under local ethyl chloride anesthesia, by puncture of the thinned epidermis or excision of the top. Free incision is not desirable. Squeezing is tabu. 4. Absorbent dressings changed often enough to maintain drainage; i. e., to prevent crust formation in the upper layers of the dressing. 5. Protection of the surrounding skin by washing with ether and alcohol and the application of Paste of Zinc Oxide dusted with talcum powder. 6. Stimulation of healing, after removal of the core (which must never be done forcibly) by Balsam of Peru dressing. Dressing is continued until healing is complete and there are no crusts that might cause autoinoculation.

Recurrence of the furuncles should be prevented by: 1. Washing the affected area with Tincture of Green Soap and a face brush and hot towel, followed by alcohol or other disinfectant lotion (prescription 1).

PRESCRIPTION 1.—*Salicylic Acid Lotion*

℞	Salicylic acid		2.00 Gm.
	Alcohol		75.00 cc.
	Water	to make	100.00 cc.
M.	Label: Apply locally.		

2. Frequent hot baths and changes of underclothing should be given. 3. The skin should be kept dry by dusting with Salicylated Talcum Powder (prescription 2). 4. For areas (back of the neck or the axillae) in

PRESCRIPTION 2.—*Salicylic Acid Dusting Powder*

℞	Salicylic acid		1.50 Gm.
	Talcum		30.00 Gm.
M.	Label: Dusting powder.		

which boils obstinately recur, a series of five to six roentgen treatments (85 kilovolts, no filter, 75 roentgens, once a week) often suffices for a permanent cure (possibly, in part, by antagonizing hyperhidrosis).

GENERAL TREATMENT

Impairment of nutrition should be corrected. In all cases of furunculosis the patient should be examined for diabetes, nephritis or anemia and appropriate treatment instituted if any one of these conditions is found. Obesity may require attention. Vitamin deficiency, if present, might be corrected by cod liver oil, general ultraviolet irradiation or sun baths and possibly by brewers' yeast.

Resistance should be improved by (*a*) removal of foci of infection, which may keep general resistance low. (*b*) Vaccine therapy with autogenous vaccine, starting several days after disappearance of the acute lesions on account of the possibility of the negative phase aggravating the condition. The dose aimed at should be such as to cause a definite but mild local reaction. If the reaction has been excessive, the dose is repeated; otherwise it is gradually increased until the patient tolerates without reaction possibly ten times the dose that at first produced a reaction. The interval between doses should be such as to permit complete disappearance of all phenomena of reaction, possibly three, five or seven days.

FURUNCLES IN SPECIAL LOCATIONS

In all of these localizations of furuncles, roentgen irradiation should be employed. In the acute lesions 140 kilovolts is used, with 0.25 mm. of copper and 1 mm. of aluminum and 300 roentgens the first day and 150 roentgens the second day. In subacute lesions 150 roentgens is used for three or four consecutive days.

Of External Auditory Canal.—Before the pointing of the abscess, one should relieve pain, which is usually severe and increased by opening the mouth (a point of value in differentiation from otitis media) by use of a systemic analgesic (see Therapy of Pain). Irrigations, attempts at local analgesia, and early incisions are useless. 2. Alcohol (95 per cent) should be instilled hourly, the head being kept inclined to the well side for five minutes. Heat should be applied to the auricle and the side of face by fomentation, poultice or incandescent light.

The appearance of a yellowish point of softening indicates incision with the point of a bistoury. The pus should be wiped out frequently (every hour or two) with cotton applicators dipped in saturated alcoholic solution of boric acid (3 per cent).

Recurrence may be prevented after healing by: 1. Boric acid alcohol instillation (prescription 3) morning

PRESCRIPTION 3.—*Boric Acid Alcohol*

℞	Boric acid	0.90 Gm.
	Alcohol	30.00 cc.
M.	Label: Ear lotion.	

and evening. 2. Relief of itching by salicylic acid oil (1:10) with prohibition of scratching by introduction of any foreign body into auditory canal. 3. Autogenous vaccine, in case of recurrence in spite of these precautions.

Nasal Furuncle.—Application inside and outside of the nostril of small flat cotton compresses saturated with hot boric acid solution favors earlier opening on the inside of the nose than would otherwise occur. "Picking" of the nose should be forbidden.

Upper Lip Furuncle and Facial Furuncle. — These are deservedly dreaded because, no matter how mildly they start, they may be suddenly followed by intense swelling of the lip and carbuncle formation, as well as, because of the richness of the veins in this area, they may become complicated by thrombophlebitis, meningitis, septicemia and death. Hence the most innocent looking furuncle of the lip or face should be treated by: 1. Absolute immobilization of the part: speaking, eating or drinking must be forbidden, feeding being done through a tube. 2. Prohibition of trauma, such as scratching or squeezing. 3. Energetic local and general treatment in accordance with the principles laid down, especially by frequent irrigation of the undersurface of the lip with warm boric acid solution and roentgen irradiation, as already described.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PAUL NICHOLAS LEECH, Secretary.

HIPPURAN.—Sodium ortho-iodohippurate.—$C_6H_4I.CONH.CH_2COONa+2H_2O$. The sodium salt of *o*-iodohippuric acid. Hippuran contains 38.8 per cent of iodine, when calculated to the dried substance.

Actions and Uses.—Hippuran is proposed for use as a radiopaque agent for intravenous, oral or retrograde urography. When used by the intravenous route, irritation at the site of injection is stated not to occur and systemic reactions appear to be unusual; a sensation of generalized warmth is said to be the most common side-effect; nausea occurs occasionally and vomiting rarely. Fasting and dehydration of patients preliminary to administration of the drug are usually employed. Pressure over the bladder region is employed by some clinicians; this is released immediately before the first exposure and is replaced until the next. Ordinarily the first film is exposed about ten minutes after injection and two subsequent pictures are taken at fifteen or twenty minute intervals. In case excretion is delayed, later exposures may be necessary.

Results with oral administration of the drug are less satisfactory but a sufficiently high percentage of successful pictures appear to be obtained to make this method worthy of trial in occasional cases in which intravenous or retrograde urography is not feasible. The somewhat objectionable taste of the compound usually does not militate against its ingestion. Toxic effects after oral administration have not been reported. Pictures are taken 60, 90, 120 and 150 minutes after oral administration. The use of moderate compression over the bladder region is recommended in the intervals between exposures. While the iodine in hippuran is firmly bound, the compound should nevertheless be used with caution if at all in patients with hyperthyroidism and tuberculosis. The use of the drug is contraindicated in severe liver disorders, nephritis and uremia. In suspected cases preliminary hepatic and renal function tests should be employed.

Satisfactory visualization has been reported with hippuran when employed by the retrograde method for urethrograms, cystograms or pyelograms. There is said to be little or no tissue irritation with effective concentrations.

Dosage.—For intravenous use, 25 cc. of a solution containing 12 Gm. of hippuran, previously warmed to body temperature, is injected into the cubital vein. Young children are given proportionately smaller doses. For oral use, 12 Gm. of hippuran is dissolved in 75 cc. of simple syrup. For children, 10 Gm. is employed. For retrograde use, hippuran is employed in 15 to 20 per cent solution for pyelography or 3 to 5 per cent solution for cystography. The solution may be made either by diluting the ampule solution with sterile distilled water or by dissolving the crystals in distilled water, filtering and sterilizing by heat.

Manufactured by Mallinckrodt Chemical Works, St. Louis. U. S. patent and trademark applied for.

Hippuran (Crystals) 12 Gm. vial.

Sterile Solution Hippuran 25 cc. size: 25 cc. contains 12 Gm. hippuran.

Hippuran occurs as a white, crystalline powder, possessing a faint odor and an alkaline taste; very soluble in water, freely soluble in ethyl alcohol and soluble in dilute alkali. An aqueous solution is neutral or faintly alkaline to litmus.

Fuse about 0.2 Gm. of hippuran with 2 Gm. of powdered sodium hydroxide: it decomposes with the evolution of iodine vapors and ammonia. Dissolve about 0.5 Gm. of hippuran in 100 cc. of water, add an excess of diluted hydrochloric acid; collect the resultant *o*-iodohippuric acid on a filter, wash and dry at 110 C.: it melts at 171 to 174 C.; to 1 cc. of the foregoing filtrate add 10 cc. of uranyl zinc acetate solution: a yellow precipitate results. Transfer about 0.5 Gm. of hippuran to a glass-stoppered cylinder, add 25 cc. of a diluted nitric acid (one part diluted nitric acid and 5 parts water), shake for five minutes, filter: the filtrate yields no distinct opalescence on the addition of 2 cc. silver nitrate solution (*absence of inorganic halides*).

Dissolve about 0.5 Gm. of hippuran in 50 cc. of water, add 5 cc. diluted hydrochloric acid, filter: separate portions of 10 cc. each of the filtrate yield no turbidity on the addition of 1 cc. of barium chloride solution (*sulphate*); no coloration or precipitation on saturation with hydrogen sulphide (*salts of heavy metals*).

Dry about 1 Gm. of hippuran, accurately weighed, to constant weight at 100 C.: the loss in weight is not more than 10 per cent nor less than 6 per cent. Boil about 1 Gm. of hippuran, accurately weighed, with 10 cc. of benzene for fifteen minutes, replacing the evaporated liquid if necessary, decant the supernatant liquid through filter paper and wash filter with 10 cc. and 5 cc. portions, respectively; evaporate the combined filtrates to dryness in a tared beaker and dry to constant weight at 100 cc.: the residue does not exceed 0.2 per cent (*uncombined o-iodohippuric acid*). Transfer about 0.5 Gm. of hippuran, accurately weighed, to a 500 cc. kjeldahl flask; determine the nitrogen content according to the official method described in Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists, third edition, page 20, chapter 2, paragraph 22: the percentage of nitrogen corresponds to not less than 4.1 per cent, nor more than 4.4 per cent when calculated to the dried substance. Weigh accurately about 1 Gm. of hippuran in a tared platinum dish, add 5 cc. of sulphuric acid, heat *cautiously* while fumes of iodine and sulphur trioxide are evolved; repeat twice, using portions of 1 cc. each of sulphuric acid; add about 0.5 Gm. of ammonium carbonate; ignite to constant weight, and weigh as sodium sulphate: the sodium found corresponds to not less than 6.8 per cent nor more than 7.3 per cent, when calculated to the dried substance. Transfer about 0.5 Gm. of hippuran to a Parr sulphur bomb; determine the iodine content by the Lemp-Broderson method (*J. Am. Chem. Soc.* **39:** 2069): the amount of iodine found corresponds to not less than 38.5 per cent nor more than 39 per cent, when calculated to the dried substance.

DEXTROSE (See New and Nonofficial Remedies, 1934, p. 270).

The following dosage forms have been accepted:

Ampoules Glucose (Dextrose, U. S. P.) Lilly, Unbuffered, 25 Gm., 50 cc.: Each ampule contains dextrose, U. S. P., 25 Gm. in distilled water to make 50 cc.

Prepared by Eli Lilly & Co., Indianapolis.

Ampoules Glucose (Dextrose, U. S. P.) Lilly, Buffered, 25 Gm. 50 cc.: Each ampule contains dextrose, U. S. P., 25 Gm. in distilled water to make 50 cc. The solution is buffered with sodium citrate, 0.25 per cent.

Prepared by Eli Lilly & Co., Indianapolis.

Ampoules Glucose (Dextrose, U. S. P.) Lilly, Unbuffered, 50 Gm., 100 cc.: Each ampule contains dextrose, U. S. P., 50 Gm. in distilled water to make 100 cc.

Prepared by Eli Lilly & Co., Indianapolis.

ERYSIPELAS STREPTOCOCCUS ANTITOXIN (See New and Nonofficial Remedies, 1934, p. 369).

United States Standard Products Company, Woodworth, Wis.

Erysipelas Streptococcus Antitoxin (Refined and Concentrated).—Prepared by immunizing horses with toxin and cultures of streptococci isolated from erysipelas cases. When tests of trial bleedings indicate that the potency is sufficiently high the horses are bled and the plasma concentrated and refined by methods similar to those used for other antitoxins. The product is preserved with 0.4 per cent cresol in a 50 per cent ether solution. Potency tests are carried out by making serial dilutions of the antitoxin with equal amounts of erysipelas toxin and determining the titer by the rabbit ear method which is a toxin neutralization test.

Marketed in packages of one syringe containing approximately 15 cc., the average initial therapeutic dose.

Committee on Foods

THE COMMITTEE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

RAYMOND HERTWIG, Secretary.

NOT ACCEPTABLE

SIMS MALT-O-WHEAT BREAKFAST CEREAL WHOLE WHEAT (COARSE BRAN REMOVED) FLAVORED WITH TOASTED BARLEY; ULTRA-VIOLET RAYED

Sims, Inc., St. Paul, submitted to the Committee on Foods a packaged coarsely granular durum wheat (coarse bran and some flour removed) containing a small amount of toasted barley malt, called Sims Malt-O-Wheat Breakfast Cereal. The product is treated with ultraviolet rays and heat to destroy insects.

Analysis (submitted by manufacturer).—

	per cent
Moisture	8.2
Ash	1.7
Fat (ether extraction method)	2.5
Protein (N × 6.25)	16.8
Crude fiber	2.7
Carbohydrates other than crude fiber (by difference)	68.1

Discussion of Label.—The label carries the following statements:

"Malt-O-Wheat Breakfast Cereal . . . ultra-violet rayed . . . treated by our special patented ultra-violet ray process to insure absolute purity and cleanliness. . . . Breakfast monotony can be avoided by serving this healthful cereal . . . healthful food. . . . The essential minerals and vitamins of the whole wheat are carefully retained. . . . Every precaution is taken . . . to safeguard the high standard of healthfulness recognized by thousands of dietitians and physicians who use and recommend Sims. . . . The addition of carmelized malt creates the distinctive flavor blend. . . . No single article of food contains such an abundance of energy units balanced with other necessary elements—proteins, minerals, vitamins—as wheat . . ."

The name Malt-O-Wheat Breakfast Cereal unduly emphasizes the malt ingredient, which is present only in small quantity. The unqualified prominent claim, "ultra-violet rayed" incorrectly implies that the cereal is irradiated by this well known process for producing vitamin D. The treatment is for destroying insects only but does not "insure absolute purity and cleanliness."

The cereal is not more "healthful" than other common foods. It will not correct any abnormal condition or actively improve health, nor does it possess any unique health-giving properties as implied by the designations "healthful cereal" and "healthful food." Statements such as "the essential minerals and vitamins of the whole wheat are carefully retained" should name the mineral and vitamins, to avoid inferences that wheat contains *all* the "essential minerals and vitamins."

No evidence was furnished indicating that "thousands of dietitians and physicians . . . use and recommend Sims." Vague alleged recommendations of physicians or dietitians deceptively convey by implication imaginary special nutritional or therapeutic values to the product. Recommendations for a food should specifically state why the food is recommended or for what purpose. The added toasted malt should not be given the unrecognized name "carmelized malt." Wheat does not warrant being singled out from common foods as containing a special "balance" of "energy units, proteins, minerals, vitamins," thereby incorrectly suggesting unusual nutritional values due to uniquely proportioned "minerals, proteins, vitamins."

The label claims in considerable part are misinformative and misleading. Advertising should truthfully and appropriately, in terms readily understandable by the public, present the values of foods.

The company was informed of the criticisms and recommendations of the Committee but has not demonstrated compliance. This cereal will therefore not be listed among the Committee's accepted foods.

NOT ACCEPTABLE

WARFIELD ENERGIZED PURE COCOA WITH VITAMIN B ADDED

The Warfield Chocolate Company, Chicago, submitted to the Committee on Foods a powdered cocoa mixed with a small amount of dried yeast, called "Warfield Energized Pure Cocoa with Vitamin B Added."

Discussion of Name and Label.—The label carries the following statements:

"Warfield's Energized Pure Cocoa with Vitamin B Added is high quality rich cocoa made better by the addition of vitamin B, the energy building element. Thus, to the natural nutritive qualities of expertly made fine cocoa, we have added, by a special process, an element which makes it even more healthful for drinking, baking and cooking."

The name "Energized Cocoa with Vitamin B Added" deceptively suggests that the product contains more "energy" than usual cocoa and that vitamin B per se has been added instead of a small quantity of dried yeast containing some vitamin B. The added dried yeast should be declared in conjunction with the name "Cocoa." Vitamin B is not an "energy building element," does not "give energy," nor is it a "chemical element" as implied. The small amount of yeast ingredient containing vitamin B does not make the product "more healthful," implying a positive promotion of health, nor does it increase the vitamin B content of the cocoa enough to warrant prominent vitamin B claim for the product.

The name and label are grossly deceptive in that they falsely imply that the food article has unusual nutritional or therapeutic "health giving" properties and a high vitamin B content. The company was informed of the opinion of the Committee, but has not demonstrated that steps have been taken to revise the name and label to make them appropriate and truthful. This product will therefore not be listed among the Committee's accepted foods.

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

MALDEN BRAND PURE EVAPORATED MILK

Distributor.—Northern Products Company, Inc., Malden, Mass.

Packer.—The Defiance Milk Products Company, Defiance, Ohio.

Description.—Canned unsweetened sterilized evaporated milk, the same as Defiance Pure Evaporated Milk, THE JOURNAL, March 3, 1934, page 693.

HIGH UP BRAND CRYSTAL WHITE SYRUP

Distributor.—The Guymon-Petro Mercantile Co., Dodge City and Hutchinson, Kan.

Packer.—The Hubinger Company, Keokuk, Iowa.

Description.—Table syrup; corn syrup flavored with sucrose syrup and vanilla extract. The same as Hubinger Crystal White Syrup, THE JOURNAL, Jan. 27, 1934, page 293.

Claims of Manufacturer.—Recommended for use as an easily digestible and readily assimilable carbohydrate supplement to milk in infant feeding and as a syrup for cooking, baking and the table.

KEYSTONE BRAND EVAPORATED MILK

Distributors.—(1) United Wholesale Grocery Company, Pottsville, Pa., (2) Sunbury Wholesale Grocery Company, Sunbury, Pa.

Packer.—The Page Milk Company, Merrill, Wis.

Description.—Canned unsweetened sterilized evaporated milk, the same as Page Brand Evaporated Milk (Sterilized, Unsweetened), THE JOURNAL, May 30, 1931, page 1872.

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SATURDAY, AUGUST 11, 1934

VITAMIN D AND CALCIUM IN FOODS

The efficacy of the commonly used sources of vitamin D in the cure and prevention of infantile rickets has led to the tacit assumption that it would be well from the nutritional point of view to add this food factor to the diet of all persons. This suggestion has not escaped adverse comment. However, the attention given to the vitamin D potency of cod liver oil and halibut liver oil with viosterol, and of egg yolk and liver has raised the question of the efficacy as antirachitic and mineralizing agents of some common foods less widely heralded in this respect. Kohman, Sanborn, Eddy and Gurin [1] have called attention to the paucity of information on this point and reported the results of an experimental study.

A mixture of five commercially canned foods—sweet potatoes, spinach, peas, carrots and roast beef—was chosen as more or less similar to an ordinary human diet. To this ration was added calcium lactate until the content of calcium and phosphorus as well as the ratio of one to the other was similar to that of the well known Steenbock rachitogenic ration. When this diet was fed to laboratory animals, it was found that the proportion of ash in the bone was influenced little, if any, by the addition of vitamin D in the form of cod liver oil, indicating that in ordinary foods there is an adequate amount of this factor even for the needs of young growing animals. That vitamin D was present in this diet in significant concentration was then shown by mixing the food mixture in equal parts with the severely rachitogenic diet of Steenbock; here again addition of cod liver oil exerted little influence on the percentage of bone ash.

A further study having a bearing on the foregoing observation was carried out. Several generations of experimental animals were given three diets: a mixture of raw foods, the same after so-called home cooking, and a similar mixture after having been canned (commercially). The reproduction, including consideration of birth and weaning weights of the young, was definitely superior in the group given the cooked and canned foods. Furthermore, the young fed the canned food grew far better than those given the raw diet. The authors are inclined to attribute the favorable effect of cooking to the change produced in the cellulose, thus preventing it from absorbing calcium, which would then be lost in the feces. There is no doubt that, when milk is added to both the raw and the cooked food, there is a definite increase in bone ash on all three diets and the differences between raw and cooked foods is eliminated.

These observations indicate again that in foods chosen to be generally representative of our national dietary there is an appreciable lack of calcium. However, the deleterious influence of indigestible residue on calcium absorption can be largely overcome by providing an additional source of this mineral element in readily available form. Furthermore, it appears that in ordinary dietary mixtures chosen in conformity with modern precepts of nutrition there are present adequate amounts of the appropriate accessory food factors for the promotion of satisfactory utilization of calcium and phosphorus.

1. Kohman, E. F.; Sanborn, N. H.; Eddy, W. H., and Gurin, C. Z.: J. Indust. & Engin. Chem. **26**: 758 (July) 1934.

COMMON COLDS AND THE WEATHER

Analysis of the factors influencing the so-called common cold are exceedingly complex. Even when attempts are made to correlate the respiratory attack rate with weather variations alone, much difficulty is encountered in dissociating the "weather" components.

Smiley [1] in 1926 reviewed twelve years of monthly records of illness available for 4,000 male students of Cornell University. He found that the peak months for acute respiratory infection, year after year, were December, January, February and March. Of these months, January most commonly carried the peak, four times out of twelve. Just how season was related to incidence of acute respiratory infections was not so clear. He plotted the curves of acute respiratory infections over this period against the mean temperature curves and arrived at a relationship roughly reciprocal. By plotting the average daily precipitation for each month against the average number of acute respiratory infections per school day for that month, only an indefinite relationship between the two was shown. When the average daily hours of sunshine for each month were plotted against the average number of acute respiratory infections per school day for that month, a roughly reciprocal relationship as definite as that between temperature and respiratory infections was obtained. He therefore concluded that apparently there was a definite reciprocal relationship between the incidence of the acute respiratory infections and the mean outside atmospheric temperature. There seemed to be also a relationship between the respiratory infections and the average daily hours of sunshine.

1. Smiley, D. F.: Seasonal Factors in the Incidence of the Acute Respiratory Infections, Am. J. Hyg. **6**: 621 (Sept.) 1926.

More recently a further attempt to analyze the weather conditions in relation to the common cold has been published by Gover and her co-workers.[2] The complicated nature of the problem is well recognized by these workers, who say:

> Because summer and winter, in terms of meteorological conditions, are a composite expression of many varying factors, the problem of relating the incidence of disease to atmospheric conditions is a complicated one. It is obvious that the mere increase in mortality in the fall and winter when there is a decrease in the hours of sunshine cannot be assumed to express any causative relationship. The same is true of temperature and other weather conditions that may, on closer examination, be found to be associated with the incidence of respiratory diseases. Aside from the fallacy of assuming causative relationship, it cannot be assumed that there is any very close association between such variables as respiratory disease incidence and temperature or hours of sunshine until the usual or normal seasonal variation has been eliminated from the picture. So many weather conditions show the same seasonal swing that any one or all might appear to be closely correlated with respiratory affections unless examined apart from seasonal variation.

The data used in this study were obtained from a survey made on the weekly incidence of respiratory disorders among students in various universities of the United States in a period of eighteen months from November 1923 to April 1925. The six university groups comprising the study were well distributed geographically: Boston; Washington, D. C.; Columbus, Ohio; Chicago; New Orleans, and Berkeley, Calif. Weather conditions with respect to mean temperature, daily temperature range, relative humidity, absolute humidity, hours of sunshine, wind velocity, precipitation, and the respiratory attacks were considered in weekly intervals. A full twelve months period was also presented to give a climatic background for each city. An examination of the weather variables by statistical methods did not reveal any close association between the magnitude of the respiratory attack rate and weather conditions, though there was a tendency to slight association of some of the items. Thus, for the year ended May 2, 1925, in each city except Boston, the attack rate showed a small negative correlation with the mean temperature. This appears to be statistically significant as judged by its probable error. Daily temperature range, however, showed a significant correlation in only one of the cities. It was concluded that no definite association of respiratory attack rates with marked variations in climate could be determined. Weekly deviations from the "norm" of the respiratory attack rate showed a small association with deviations from the "norm" in mean temperature for the corresponding week and also for the preceding week. A respiratory attack rate above normal was associated with a mean temperature below normal; this association was higher during the early fall months than at any other time of the year.

It has been difficult to collect reliable information of the incidence of respiratory disturbances in relation to weather conditions on a large enough number of persons to have significance. Climatic and geographic distribution has also been difficult to obtain; but, as the most extensive study so far made on the subject, the report of Gover and her collaborators offers some corroboratory basis for the common impression that "colds" are more frequent in cold weather.

2. Gover, Mary; Reed, L. J., and Collins, S. D.: Time Distribution of Common Colds and Its Relation to Corresponding Weather Conditions, Pub. Health Rep. **49**: 811 (July 13) 1934.

SPONTANEOUS RECOVERY IN MESENTERIC VASCULAR OCCLUSION

The prognosis in superior mesenteric thrombosis usually is gloomy. Occasionally, however, recovery occurs following surgical intervention, or it may be spontaneous. Sargent [1] recently reported the case of a man, aged 74, who suddenly had intense pain in the upper part of the abdomen above and to the left of the umbilicus. The abdomen was tender on palpation over this area and slightly rigid. He gave no account of previous attacks of abdominal disease. Soon after admission to the hospital, the patient passed a stool suggestive of melena. A diagnosis of partial intestinal obstruction was made and a laparatomy was performed. About four feet of the ileum was found to be dilated and of a dark plum color. The blood vessels in the mesentery felt like thickened cords, and nowhere did they pulsate. In view of the patient's age and the amount of tissue involved, an attempt at resection was not made and the abdomen was closed. The patient was gravely ill for several days, but a week after the operation the hiccuping, vomiting and pain suddenly ceased and a normal stool was passed. In another week the patient had almost completely recovered. The facts in this case apparently fit a diagnosis of superior mesenteric thrombosis, although the condition may have been volvulus, as was suggested to the author.

Mesenteric vascular occlusion may arise following some abdominal infection, particularly appendicitis, or it may be the result of some disease of the circulatory system, such as arteriosclerosis, endocarditis, phlebitis or aneurysm. The absence of an infectious etiology is a favorable factor. In view of the history it seems that the case described by Sargent was not the result of infection. In 1931 Meyer [2] reviewed the literature on mesenteric vascular occlusion for the previous ten years and found that ninety-two proved cases had been reported. Among these cases were nine instances of spontaneous recoveries. An exploratory operation alone was done seventeen times, and six of the patients recovered. There were forty-three cases in which resection was done, followed by a mortality of 32.6 per cent. Three patients recovered following almost complete removal of the small intestine.

In THE JOURNAL [3] recently was reported the case of a man, aged 60, who had a sudden mesenteric throm-

1. Sargent, R. M.: Spontaneous Recovery in Superior Mesenteric Thrombosis, Brit. M. J. **2**: 64 (July 14) 1934.
2. Meyer, J. L.: Mesenteric Vascular Occlusion, Ann. Surg. **94**: 88 (July) 1931.
3. Curry, G. J., and Backus, G. R.: Superior Mesenteric Thrombosis with Recovery, J. A. M. A. **102**: 839 (March 17) 1934.

bosis, which was not associated with any previous abdominal complaints or with infective process. He was operated on about five hours after the onset of symptoms, and about two and a half feet of the small intestine was resected. The favorable result in this case may have been due to the early operative intervention.

Current Comment

STANDARDS OF PRENATAL CARE

In February the Children's Bureau published a revised pamphlet [1] containing the minimum professional care which, in the opinion of the advisory committee, pregnant women should receive. The first edition of these standards was issued in 1925, at which time it was recognized that if all the requirements considered desirable or necessary by a number of different specialists were included, the material would be too bulky to be of use to the medical profession. As a result of intelligent compromise, an outline has been produced that includes essentials of past history, obstetric history, physical and laboratory examinations, and instructions to patients, which fills only four pages. In this edition the only change has been the addition of the hemoglobin test to the physical examination. As a guide, especially to those not specializing in obstetrics, this pamphlet should be particularly useful. In view of the widespread interest in and comment on maternal mortality, it would seem that every physician would desire to be at least as thorough as the suggestions of the outline. It seems probable, in recognition of the published analyses of the causes of maternal deaths, that thoroughness of prenatal care alone would have some effect on the number of maternal deaths.

THE LEGION AWARD CITATION TO WILLIAM AND CHARLES MAYO

The citation by the American Legion of Drs. William J. and Charles H. Mayo for distinguished public service, with the award made by the President of the United States in person, is a great honor for American medicine. It has been said that opportunities and great occasions make men. An exception to this rule is presented in the work and life of these distinguished medical leaders. They have made a small village become one of the notable medical centers of the world wholly through a genius for surgery and for medical leadership. Throughout their careers they have devoted themselves to the advancement of organized medicine. The medical society of the county in which they practice was founded by their father. Both have been presidents of the American Medical Association. In 1906, when Dr. William J. Mayo delivered his presidential address to the American Medical Association, he forecast and considered some of the hazards that concern medical practice today. He attacked the abuse of medical care by public service corporations and the abuses of public charity and of private institutions by those able to pay, and he condemned all systems of hospital and medical care dominated by laymen. He concluded his address with a plea for harmony in the medical profession, recognizing that only a strongly united opinion could gain for medicine the place in our civilization which it merits. Recognizing their leadership, their service to mankind and the spirit that has motivated Drs. William J. and Charles H. Mayo throughout their long and successful careers, THE JOURNAL congratulates the American Legion on bestowing its highest honor where that honor is so fully deserved.

1. Standards of Prenatal Care, Bull. 153, U. S. Dept. of Labor Children's Bureau, February 1934.

UREA AND ECONOMY OF WATER

Of the manifold recognized functions of the kidney, the one among the earliest to be recognized and, perhaps, most to be taken for granted is that of concentration. Urine contains nothing new; all its constituents, with the probable exception of ammonia, appear preformed in the blood. The renal apparatus does, however, excrete these solutes in much higher concentration than exists in the blood, with a resultant conservation of water. This activity of the kidney has recently been given quantitative expression by Gamble and his associates [1] at the Harvard Medical School. By equating the concentration of substance under investigation in the diet of experimental animals with that in the urine, the amount of water withdrawn per unit of solute was determined. The unit of solvent employed was the os-millimol, so that direct comparisons could be made on the basis of osmotic pressure. The ions Na^+, K^+, Cl^-, HCO_3^-, $H_2PO_4^-$ and $SO_4^=$, with urea, creatinine, dextrose and galactose, were used alone and in pairs. It was observed that, for all the substances examined except urea, the water requirements established for the individual solutes can be added together when the substances are used in mixtures to predict the observed values. In the case of urea, however, much less water is excreted than would be expected from the individual values. The conservation of water is a prime necessity for terrestrial animals, and urea, for mammals at least, is the leading metabolic waste product. There is in this combination of circumstances a peculiarly effective mechanism, one of a multitude of such, whereby the higher organism is adjusted to its environment.

1. Gamble, J. L.; McKhann, C. F.; Butler, A. M., and Tuthill, E.: Am. J. Physiol **109**: 139 (July) 1934.

Association News

MEDICAL BROADCASTS

Columbia Broadcasting System

The American Medical Association broadcasts on a Western network of the Columbia Broadcasting System each Thursday afternoon on the Educational Forum from 4:30 to 4:45, Central daylight saving time. The next three broadcasts and the speakers will be as follows:

August 16. Black Widow, W. W. Bauer, M.D.
August 23. Infantile Paralysis, W. W. Bauer, M.D.
August 30. Your Child Enters School, Morris Fishbein, M.D.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Plague-Infected Rodents in Modoc County.—According to *Public Health Reports*, plague-infected ground squirrels have been found in Modoc County as follows: June 26, six; July 5, one, and July 9, one.

Restriction on Manufacture of Convalescent Serum.—In view of the recent death of a child and the severe illness of another from the prophylactic use of human serum against infantile paralysis, the state department of health issued a regulation restricting the manufacture and distribution of human convalescent serum to laboratories that are approved by the state board of health. This applies to the equipment, training of personnel, technic and process of manufacture of the serum by public and private laboratories. The regulation is effective for sixty days, beginning June 27.

Immunization Campaign. — An immunization campaign against diphtheria and smallpox will be conducted for six weeks in San Francisco with the opening of schools, under the auspices of the San Francisco County Medical Society and the city department of health. A campaign was inaugurated, August 6, to acquaint the public with the objectives of the plan. Physicians have agreed to immunize free of charge all those who cannot pay, the health department furnishing the vaccine and toxoid. The department will also furnish cards to physicians for reporting the completion of each immunization and vaccination. Cards for reporting Schick tests will be issued after six months. Physicians will follow up their own patients for return appointments for injections of toxoid and vaccine but will return to the department of health the cards of those who fail to return after a period of four weeks. The department will then attempt to have the patient return to the physician. The department will also notify each patient to return to his physician when the Schick test is due. Hours during which this special immunization is done will be left to the convenience of the physician.

COLORADO

Personal.—Dr. George H. Curfman, Salida, received the merit award of the Northwestern University Alumni Association on "illumination night" in Evanston, preceding the annual commencement, June 15. The award is given annually to alumni for "worthy achievement which has reflected credit upon their alma mater."——Dr. Benjamin E. McBrayer, Arvada, was named health officer of Jefferson County, succeeding the late Dr. Richard Russell.

FLORIDA

Dengue Fever in Miami.—Eighty cases of dengue fever were reported in Miami, according to the New York *Times*, July 31. Special efforts are being made to control the spread of the disease by eradicating mosquitoes.

Society News.—At the semiannual meeting of the Central Florida Medical Association in Leesburg, June 8, speakers included Drs. Gaston H. Edwards, Orlando, and Edwin H. Andrews, Gainesville, on "Treatment of Chronic Pelvic Infections" and "Use and Abuse of Urinary Antiseptics," respectively.——Speakers before the Dade County Medical Society in Huntington, July 6, were Drs. Michael P. DeBoe, Miami, on hobbies, and Mathew Jay Flipse, Miami, agranulocytosis. ——A symposium on the urinary tract in infancy and childhood constituted the program of the Duval County Medical Society in Jacksonville, June 5; speakers were Drs. Elijah T. Sellers, Robert B. McIver, W. M. Shaw and Luther W. Holloway.

ILLINOIS

Appointed Dispatch Secretary to Virgin Islands. — Dr. Arthur I. Edison, Maywood, has been appointed resident medical officer and government secretary of the island of St. John, Virgin Islands, with the title of dispatch secretary. Dr. Edison sailed for the island, July 5. In addition to other duties, he plans to engage in medical research. Dr. Edison was formerly health officer of Broadview and Westchester.

Sale of Food Banned at Circus.—During the appearance of the Ringling Brothers-Barnum and Bailey Circus in Evanston, beginning August 2, the sale of food on the show grounds was banned by health authorities, on account of the recent outbreak of typhoid among performers. The disease was believed to have been contracted in New Castle, Pa. One death occurred in Dayton, and another in Detroit (THE JOURNAL, August 4, p. 350).

Chicago

Dr. Gellhorn Awarded Alvarenga Prize. — Dr. Ernst Gellhorn, professor of physiology, University of Illinois College of Medicine, was awarded the Alvarenga Prize for 1934 for his essay entitled "The Influence of Parathormone on the Neuromuscular System: An Experimental Analysis." The prize, amounting to about $300, is awarded by the College of Physicians of Philadelphia.

INDIANA

State Board Election. — Dr. Edmund M. Van Buskirk, Fort Wayne, was elected president of the Indiana State Board of Health, July 16, at a meeting in the State House, Indianapolis. Other members of the board are Dr. Verne K. Harvey, Indianapolis, secretary, reelected; Dr. Ernest Rupel, Indianapolis, vice president, and Dr. John C. Glackman, Rockport, the retiring president. Dr. Van Buskirk served for many years as health officer of Allen County.

Books Given to Hospital. — Sixty medical books were recently given to Indianapolis Methodist Episcopal Hospital by Mrs. John Henry Eberwein, Indianapolis. The books belonged to her father, Dr. J. B. Clark, who practiced medicine for more than fifty years in Economy. Included among them is a series of lectures given before the medical students in the University of Pennsylvania in the year 1859. Dr. Clark won this book, autographed by the author, as a prize the year he graduated. Dr. John William Hofmann recently presented the hospital's library with fifty volumes, and Dr. Robert O. McAlexander with thirty, together with about 250 medical magazines. Dr. David H. Sluss has also donated books recently.

IOWA

Annual Clinic.—The Iowa County Medical Society sponsored its third annual heart and chest clinic at Marengo, June 22. Dr. F. M. Smith of the University of Iowa College of Medicine and Dr. John H. Peck, Des Moines, president of the Iowa Tuberculosis Association, conducted the clinic. Physicians were privileged to designate patients for examination, these being visited in advance by a nurse to obtain the history. A banquet was held preceding the clinic. Dr. Smith discussed "Treatment of Heart Disease," and Dr. Peck, "Our Responsibility in Pulmonary Tuberculosis."

Society News.—Dr. Marvin Sukov, Clarinda, among others, addressed the Southwestern Iowa Postgraduate Medical Association in Clarinda, June 7, on "Current Concepts of Schizophrenia."——Dr. Furman P. Ralston, Knoxville, was elected president of the Des Moines Valley Medical Association at its sixty-first annual meeting in Ottumwa, June 18, and Dr. Edward B. Hoeven, Ottumwa, was reelected secretary.——The Grundy County Medical Society was host to the Sixth Councilor District Medical Society, July 5; speakers included Drs. Milford E. Barnes Iowa City, on "Application of Preventive Medicine to the Public Milk Supply," and Ransom D. Bernard, Clarion, "Proposed Basic Science Law."

KENTUCKY

Personal.—Dr. Edward T. Thompson, formerly administrator of Indiana University School of Medicine, Indianapolis, has been appointed superintendent of Norton Memorial Infirmary, Louisville.——Dr. Robert K. Galloway, Henderson, director of the Henderson County health department for four years, has been appointed assistant to the director of county health work of the state board of health.

Society News.—Drs. William O. Floyd and Milton Smith Lewis, Nashville, addressed a joint meeting of the Todd and Christian county medical societies at Trenton, July 19, on "Management of Hernia" and "Factors That Influence Infant Mortality in the First Month of Life," respectively.—— Dr. Irvin Abell, Louisville, addressed the Henderson County Medical Society, Henderson, recently, on cancer of the uterus.

University News.—The bacteriologic laboratory of the city of Louisville has recently been amalgamated with the bacteriologic laboratory of the Louisville City Hospital, which is affiliated with the University of Louisville School of Medicine, with James A. Kennedy, Ph.D., recently of the University of

Georgia School of Medicine, as director. Dr. Harry S. Andrews, instructor in pediatrics at the medical school, has been made director of service at the Children's Free Hospital, also affiliated with the school. Recent promotions at the university include:

Dr. Alice N. Pickett, associate professor of obstetrics.
Dr. William T. McConnell, associate clinical professor of obstetrics.
Dr. William O. Johnson, assistant clinical professor of gynecology.

LOUISIANA

Personal. — Dr. Oscar W. Bethea, professor of clinical medicine, Tulane University of Louisiana School of Medicine, New Orleans, was awarded the honorary degree of master of pharmacy by the Philadelphia College of Pharmacy and Science at its one hundred and twelfth commencement, June 6. Dr. Bethea delivered the commencement address.

MARYLAND

Model Health Unit Discontinued.—With the withdrawal of the Johns Hopkins School of Hygiene and Public Health and the Rockefeller Foundation from participation in the model health department in Anne Arundel County on the expiration of their agreement, July 31, the unit was abandoned. Established in 1931, the department was cooperatively maintained by the foundation, the school and the county and state health departments, to work out programs of preventive medicine with particular emphasis on sanitation problems. Anne Arundel County was selected because of its large population, its proximity to Baltimore, and the complicated health problems created by its many rivers and shore lines. Activities of the unit will be absorbed by the public health district instituted in 1932 in accordance with a recommendation of Dr. Joseph Mountin in his public health survey of Baltimore. This district includes the sixth and seventh wards and was created to make the residents the subject of medical experimentation in the public health field. A grant of about $25,000 for two or more years by the Rockefeller Foundation, through the school of hygiene and public health, provides for the training of public health workers. These institutions, it was stated, saw no reason for continuing their partial support of the Anne Arundel unit when the city health center can serve their purposes more conveniently and without duplication of expenditures. The county's activities will be taken over by the state and county health authorities.

MINNESOTA

State Medical Election. — Dr. William A. Coventry, Duluth, was elected president of the Minnesota State Medical Association at its annual meeting in Duluth, July 15-18, to take office in January. Dr. Alfred G. Chadbourn, Heron Lake, and Dr. E. Sydney Boleyn, Stillwater, were named vice presidents, and Drs. Edward A. Meyerding, St. Paul, and William H. Condit, Minneapolis, reelected secretary and treasurer, respectively. The next annual session will be held in Minneapolis.

MISSOURI

Heat Wave Causes High Death Rate. — Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended July 28, indicate that the highest mortality rate (34) appears for St. Louis and that the rate for the group of cities as a whole was 12.3. The unusually high death rate was attributed to the prevailing heat wave. Other high rates were for Cincinnati, 32; Omaha, 29; Kansas City, Mo., 26.2; Indianapolis, 23.9, and Memphis, 21.6. The mortality rates for these cities for the corresponding weeks of 1933 were: St. Louis, 13; Cincinnati, 14.6; Omaha, 9; Kansas City, 11; Indianapolis, 12.1; Memphis, 21. The annual rate for eighty-six cities was 11.9 for the thirty weeks of 1934 as compared with 11.3 for the corresponding period of 1933. Caution should be used in the interpretation of these weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for wide areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

NEW JERSEY

New Translation of Galen Found at Princeton.—In the course of cataloguing a collection of Arabic manuscripts on deposit in the library of Princeton University, Princeton, a translation of the treatises of Galen from Greek into the Arabic has been discovered, it was recently reported. The translation, made by Hunayn Ibn-Ishaq, bears the date 1774, according to newspaper accounts.

Epidemic of Bacillary Dysentery.—More than 100 persons have been stricken in an epidemic of bacillary dysentery, which began in Jersey City, July 21. Five deaths have occurred among children. The health department, the Red Cross and other agencies have sent nurses into the homes of victims to give instruction in sanitation and preparation of food. The capacity of the isolation wards of the Jersey City Medical Center is said to be practically exhausted, with sixty-six cases, and efforts were being made to obtain additional room at the Essex County Hospital for Contagious Diseases, Belleville, according to the New York *Times*.

NEW MEXICO

Personal.—Dr. William W. Peter, White Plains, N. Y., who for years engaged in health work in China, has been appointed medical director for the Navajo Indian Reservation.

State Medical Election. — Dr. Charles W. Gerber, Las Cruces, was named president-elect of the New Mexico Medical Society at the annual meeting in Las Vegas, July 20. Dr. Charles F. Milligan, Clayton, became president and Drs. George W. Jones, Clovis, and Lea B. Cohenour, Albuquerque, vice president and secretary, respectively. The 1935 meeting will be held in Albuquerque in May.

Public Health Meeting.—The New Mexico Public Health Association held its annual meeting in Las Vegas, July 17-18. Guest speakers were Carl E. Buck, Dr.P.H., New York, who recently made a health survey of the state; Dr. Gerrit Heusinkveld, Denver, who discussed training of midwives, and Dr. John W. Brown, health officer of Texas, Austin. Dr. Buck also discussed the health survey at a public health meeting at Ilfeld Auditorium, New Mexico Normal University.

NEW YORK

Scarlet Fever Following Picnic.—Twenty cases of scarlet fever were reported in the village of Catskill following a picnic, June 29. In three cases the illness began the next day and the others set in July 2 and 3. Both adults and children were attacked. All cases are said to have been mild. The state health department is conducting an investigation in cooperation with the local health officer, Dr. William M. Rapp.

New York City

Illegal Practitioner Given Suspended Sentence.—Mrs. Winifred Danielson, Brooklyn, pleaded guilty to illegal practice, July 9, in the court of special sessions and was sentenced to six months in the workhouse, July 19. The sentence was suspended pending good behavior. Mrs. Danielson was arrested last March on the complaint of two inspectors for the state department of education.

Health Center Accepted by City. — The East Harlem Health Center, founded in 1921 by the New York chapter of the American Red Cross, was presented to the city, June 21. Mayor La Guardia was present. Dr. Livingston Farrand, president of Cornell University, Dr. John L. Rice, health commissioner and Homer Folks, secretary of the State Charities Aid Association, gave addresses.

Personal.—Dr. Julius J. Valentine was recently decorated by the government of Venezuela for services rendered to that country. Dr. Valentine is a past president of the Pan American Medical Association.——Dr. Raymond B. Allen, associate director, New York Post-Graduate Medical School, has been appointed associate dean in charge of graduate studies at Columbia University College of Physicians and Surgeons.——Dr. Joseph W. Miller has recently been reappointed an honorary consulting surgeon to the New York City Police Department.——Dr. Jacob J. Golub sailed for Europe, July 5, on his way to spend two months as consultant to the Hebrew University in Palestine in connection with the building of the Hebrew University Hospital in Jerusalem.

Social Workers Stationed in Courts.—The experiment of having social workers stationed in magistrates' courts as advisers in mendicancy cases, sponsored by the Welfare Council of New York, will be continued as a regular function of the department of public welfare, it was recently announced. Of the number of mendicants examined it was said that 58 per cent were alcoholic addicts, 12 per cent were drug addicts, 22 per cent had venereal diseases and 15 per cent were mentally impaired. The majority were more than 40 years old and unmarried. After arrest and conviction the beggars are examined by a physician and a report is laid before the magistrate to assist him in deciding on appropriate action. Many professional beggars have been exposed; the sick have been sent to health and welfare agencies, and those who resorted to begging because they were ignorant of sources of aid have been helped through relief channels.

NORTH CAROLINA

Society News. — A symposium on cancer was presented before the Buncombe County Medical Society, Asheville, June 18, by Drs. James M. Lynch, Charles S. Norburn and George Curtis Crump. Dr. Walter R. Johnson addressed the society, June 4, on cancer of the stomach.——Dr. Merle D. Bonner, Jamestown, spoke on medical and surgical treatment of tuberculosis before the Guilford County Medical Society, Greensboro, June 7. —— Speakers before the final meeting for this season of the Mecklenburg County Medical Society, Charlotte, June 19, were Drs. Andrew J. Crowell, on "Diagnosis and Treatment of Malignancies of the Prostate"; Oren Moore, "Inversion of the Uterus," and James W. Gibbon, "Operative Treatment of Cancer of the Rectum."

OHIO

Hospital News.—A plaque was presented to Charity Hospital in Cleveland, June 20, during the annual meeting of the Catholic Hospital Association of the United States and Canada honoring the institution as the oldest hospital in the city.—— The Good Samaritan Hospital, Cincinnati, closed its outpatient clinic, June 30, because of financial stringency, it is reported. ——St. Alexis Hospital, Cleveland, celebrated the fiftieth anniversary of its founding, July 17-19. The hospital has cared for 74,291 patients in the half century, it was announced.

Society News. — Speakers at the annual meeting of the eighth district of the Ohio State Medical Association in McConnelsville, June 21, were Drs. Verne A. Dodd, Columbus, on "Surgical Aspects of Ulcers and Cancer of the Stomach"; Arthur G. Helmick, Columbus, "Nutritional Fads and Facts from the Viewpoint of the Clinician"; James M. Appel, North Royalton, "Collapse Therapy in Tuberculosis"; Reo M. Swan, Cambridge, "Amebic Dysentery," and Harry E. LeFever, Columbus, "Intracranial Hemorrhage."——Dr. Samuel J. Ellison, West Union, among others, addressed the Adams County Medical Society, West Union, June 27, on prevention of scarlet fever.——Drs. Harry H. McClellan, Dayton, and George B. Faulder, Wapakoneta, addressed the Auglaize County Medical Society, July 12, at Wapakoneta, on "Physical Causes of Nervous and Mental Diseases" and "Version versus Forceps," respectively.——The Ohio State Medical Association is preparing a series of study outlines for the use of county societies as suggestions for program material. The first two, dealing with scarlet fever and peritonitis, appeared in the August issue of the *Ohio State Medical Journal.*

OREGON

Eyesight Swindlers. — The Oregon state police recently reported that two men, using methods varying only slightly from others previously mentioned in THE JOURNAL, had swindled a Mr. and Mrs. Joseph Aubel, Grants Pass, out of $912.50 by promising to cure Mr. Aubel's eyes with radium. They assured Mr. Aubel that radium would cure his eyes in twenty-one days, the cost to be $412.50. That amount was paid with an additional $500 for the rental of a so-called radium belt, which was represented to be a positive cure for diabetes. The latter sum was to be refunded in twenty-one days. One man who called himself Dr. Miles was about 45 years old, 5 feet 9 inches tall, of stocky build and weighing about 170 pounds, smooth shaven, believed to be of Italian extraction. The other was slender, had a long face and light complexion, light hair and blue eyes, freckled face and hands. THE JOURNAL, March 17, page 849, printed a similar report, in which one man gave the name Dr. Miles, Concord and Grove Avenues, Chicago, a fictitious address.

PENNSYLVANIA

Society News.—Dr. John W. Shirer, Pittsburgh, addressed the Somerset County Medical Society, Johnstown, July 18, on the mortality of appendicitis.——Dr. Max Levin, Harrisburg, addressed the Cumberland County Medical Society, Carlisle, July 10, on medical aspects of mental hygiene.

Personal. — Dr. Donald Guthrie, Sayre, president of the Medical Society of the State of Pennsylvania, has recently been elected to membership in the Royal Academy of Medicine in Rome.——Dr. William H. Kunsman, Morrisville, recently celebrated the fiftieth anniversary of his entrance into medical practice.

Philadelphia

Personal.—Dr. Charles F. Nassau has been appointed honorary president of the John Chalmers Da Costa Foundation. The late Dr. William W. Keen formerly held this office.—— Dr. Charles H. Frazier was recently elected a member of the board of trustees of the University of Pennsylvania.—— Dr. Harry Z. Hibshman was promoted from clinical professor to professor of proctology at Temple University School of Medicine, June 1.

TENNESSEE

Compulsory Inspection of Automobiles.—A system of compulsory mechanical inspection of automobiles introduced last April in Memphis is credited with a 25 per cent reduction in deaths from automobile accidents as compared with the number for 1933. Brakes, lights, windshield wiper, steering and wheel alinement are to be tested every six months, according to the new arrangement. If a car fails to pass inspection, seven days is allowed for the owner to have repairs made. On the first test, only 28,340 of the 48,500 automobiles in Memphis passed the inspection, but a report published in June stated that 44,914 vehicles had received the sticker of approval.

Society News.—Drs. Edward T. Newell and Walter G. Bogart, Chattanooga, addressed the Hamilton County Medical Society, August 9, on "Irradiation and Cautery Excision in the Treatment of Malignancies" and "The Past Fifty Years in Medicine," respectively.——At a meeting of the Hardin-Lawrence-Lewis-Perry-Wayne Counties Medical Society in Waynesboro, June 26, speakers were Drs. J. T. Keeton, Clifton, on hypertension; Nathaniel S. Shofner, Nashville, hyperthyroidism; James Frazier Binns, Nashville, diarrhea, and James V. Hughes Jr., Savannah, rat bite.——Drs. Martin E. Blanton and Edward M. Fleenor, Johnson City, addressed the Washington County Medical Society, August 2, on "Injuries to the Eye" and "Early Diagnosis of Appendicitis in Children," respectively. —— Drs. Arthur G. Quinn and Otis S. Warr, Memphis, addressed the Tri-County Medical Association (Henderson, Decatur and Chester counties), Henderson, June 14, on "Feeding of the New-Born Infant" and "Diseases of the Colon," respectively.

TEXAS

Personal.—Dr. William W. Dunn has been appointed health officer of Beaumont.——The Venezuelan medal of honor was recently conferred on Dr. John O. McReynolds, Dallas, in recognition of his services to the cause of education "as a mark of the gratitude of the people of Venezuela."

Society News. — Dr. Stuart T. Wier, Beaumont, among others, addressed the Jefferson County Medical Society, Port Arthur, June 11, on "Amputation of the Forearm under Local Anesthesia."——Dr. Ray M. Balyeat, Oklahoma City, addressed the Grayson County Medical Association, June 12, on diagnosis and treatment of allergic conditions.——At a meeting of the Twelfth District Medical Society at Hillsboro, July 10, speakers included Drs. Titus H. Harris, Galveston, on "Psychiatry as Related to Medicine in General"; Leslie E. Kelton Jr., Corsicana, "Amebiasis," and Roy G. Giles, Temple, "Roentgen Therapy in Carcinoma of the Breast."

VERMONT

Society News.—The annual meeting of the New England Surgical Society will be held at Burlington, September 28-29. ——Dr. George R. Eades, Keene, N. H., addressed the Windham County Medical Society, Brattleboro, June 13, on acute otitis media. —— Dr. Clarence A. Bonner, Danvers, Mass., addressed the Windsor County Medical Society, Windsor, May 17, on "Modern Trends in the Treatment of the Insane."—— At the quarterly meeting of the Northeastern County Medical Society, Barton, in May, Dr. Fraser B. Gurd, Montreal, delivered an address on "Rectal Conditions as Met by the General Practitioner."

WEST VIRGINIA

Society News.—Maj. Gen. Harry L. Gilchrist, Washington, D. C., addressed a joint meeting of the Ohio County Medical Society and the Fort Henry chapter, Reserve Officers' Association in Wheeling, in May, on chemical warfare. —— Drs. Frederick R. Whittlesey, Morgantown, and Justus C. Pickett, Pursglove, addressed the Monongalia County Medical Society, Morgantown, June 5, on heart disease and disability resulting from injuries to the vertebral column, respectively.

Sterilization Law to Be Enforced.—A law authorizing sterilization of inmates of various state institutions gives heads of those institutions the right to petition the Public Health Council for permission to enforce the law, according to a ruling handed down by the council at a meeting, July 11. The sterilization law was passed in 1929 but has never been enforced because of certain details that have not been sufficiently studied, it was said. The ruling paves the way for inaugurating a program of sterilization of the mentally unfit, of which there

are reported to be more than 400 in the state. The statute provides for hearings on each case in the county in which the patient resides.

WYOMING

State Medical Election.—Dr. Joseph L. Wicks, Evanston, was named president-elect of the Wyoming State Medical Society at the annual session in Casper, July 16, and Dr. Herbert L. Harvey, Casper, was installed as president. Dr. Chester Harris, Basin, was elected vice president and Dr. Earl Whedon, Sheridan, reelected secretary. The 1935 meeting will be held in Lander in June.

GENERAL

Society News.—The National Medical Association will hold its annual meeting in Nashville, Tenn., August 13-18, under the presidency of Dr. Midian O. Bousfield, Chicago.——The American College of Physicians will hold its nineteenth annual clinical session in Philadelphia, April 29-May 3, 1935.

News of Epidemics.—About 150 cases of malaria have occurred in an outbreak in Georgetown County, South Carolina, newspapers reported, July 12.——Nine cases of typhoid with three deaths were reported in Fremont, Ohio, July 6; the source was not determined.——Whooping cough was said to be epidemic in Erie, Pa., with fifty-five cases reported in June, as compared with five cases for June, 1933.——Thirty-eight cases of typhoid, with seven deaths, have occurred in Monmouth County, N. J., since May 1; the source has not been definitely determined, but two carriers were found working in food shops.——Twelve persons were reported to be suffering from typhoid in Decatur, Ala., as a result of using water from a contaminated well.

Financial Aid for College Students.—Twelve per cent of the students of non-profit making colleges will be assisted in earning their way through school during the coming winter through the student aid program of the Federal Emergency Relief Administration, it was recently announced. The number aided will be about 100,000, it is estimated. Last year 10 per cent of the enrolments, or about 75,000, were helped. FERA funds will be allotted through state emergency relief administrations to certain qualifying institutions and paid to the students for part time work on socially desirable projects. It is suggested that medical students may aid in the health work and nutrition projects carried on by the relief administration. L. R. Alderman, director of the educational division of the relief administration, is in charge of the student aid program. Students may earn up to $20 a month each.

American Public Health Association.—The sixty-third annual meeting of the American Public Health Association will be held in Pasadena, Calif., September 3-6. The preliminary program includes the following speakers and addresses:

Elmer V. McCollum, Ph.D., Baltimore, Nutritional Aspects of Milk Pasteurization.
Dr. Maurice L. Tainter and Windsor C. Cutting, San Francisco, Use of Dinitrophenol in Nutritional Disorders.
R. R. Parker, U. S. Public Health Service, Hamilton, Mont., Rocky Mountain Spotted Fever: Result of Ten Years' Prophylactic Vaccination.
Dr. William W. Bauer, Chicago, Rôle of Milk in Diets.
Dr. John E. Gordon and G. F. Badger, Detroit, and George B. Darling Jr., Dr.P.H., Battle Creek, Mich., Reaction of Familial Contacts to Scarlet Fever Infection.
Dr. Francis W. O'Connor, New York, The Concern of the United States with Tropical Diseases.
Emery W. Dennis, Ph.D., American University of Beirut, Syria, Dysenteries and Diarrheas of Childhood in the Near East.

A symposium on amebic dysentery will be presented by Karl F. Meyer, Ph.D., Drs. Alfred C. Reed and Jacob C. Geiger, all of San Francisco, and the subject will also be discussed in a symposium on municipal public health engineering by Joel I. Connolly and Arthur E. Gorman, Chicago, sanitary engineers. During the four days preceding the association's meeting, Dr. Iago Galdston, New York, will conduct the third Institute on Health Education.

FOREIGN

Orthopedic Prize.—The Rizzoli Orthopedic Institute in Bologna, Italy, announces the opening of competition for the Umberto I prize of 3,500 lire for "the best orthopedic work or invention." Foreign physicians are invited to submit entries, which will be judged by the provincial council of Bologna. Regulations governing the competition may be obtained from the president of the Rizzoli Institute. Entries must be submitted before December 31.

Tuberculosis Campaign in China.—The National Anti-Tuberculosis Association of China was formed within recent months, with Dr. Way S. New, Shanghai, as chairman of the administrative board and with headquarters in the building of the Chinese Medical Association. According to regulations adopted to govern the association, the administrative board is to have fifty-five members and there will also be a supervisory board of eleven members. A general secretary will execute the work of the association, which will have both individual and group memberships.

Radiologic Institute in Madras.—The Madras Government Institute of Radiology was opened March 26, in connection with the Madras Government General Hospital at Madras. The institute, a two story building, is connected with the surgical block of the hospital and is expected to become an important training center for India. It provides rooms for all types of roentgenologic work, clinical photographic and electrocardiographic departments, a hydrotherapy section, ultraviolet ray center, a radium theater, radon laboratory, a radium safe room and halls for remedial exercises and electrical and heat treatments.

Society News.—The fourth conference of the International Association of Preventive Pediatrics (the medical section of the International Save the Children Union) will be held in Lyons, France, September 27-28. Themes to be considered are prevention of malaria in children and prevention of rickets and spasmophilia. Further details may be obtained from the secretary of the association, 15 rue Lévrier, Geneva.——A congress on colibacillosis and other infections and intoxications of intestinal origin will be held September 23-24, at Chatel-Guyon, France, under the presidency of Prof. Paul Carnot. This meeting was first announced for May 20-21. The secretary of the congress is Dr. Pierre Balme, Société des Eaux Minerales, Chatel-Guyon.

Personal.—The honorary degree of doctor of science was recently conferred on Sir Henry Wellcome, head of the Wellcome Research Foundation, London, by Marquette University, Milwaukee.——Dr. Samuel E. Whitnall, Robert Reford professor of anatomy, McGill University Faculty of Medicine, Montreal, has been appointed professor of anatomy at the University of Bristol, England, to succeed Prof. Edward Fawcett. ——Sir Frederick Gowland Hopkins, president of the Royal Society of England since 1931, has been awarded the Albert Medal of the Royal Society of Arts for 1934 "for his researches in biochemistry and the constituents of food." This medal was instituted in 1826 and is awarded annually for merit in promoting arts, manufactures or commerce.——Salvatore Ottolenghi, director of the Italian Scientific Police and professor of legal medicine, University of Rome, died recently, in Rome.

Government Services

Veterans' Home to Be Converted to Neuropsychiatric Facility

The Veterans' Administration Home at Danville, Ill., will shortly be remodeled into a neuropsychiatric facility, the administrator of veterans' affairs recently announced. Extensive alterations will provide for an ultimate capacity of 1,800 beds. Heating, plumbing and electrical work will be replaced; fireproof stairways will be built; the dining hall and kitchen building are to be rearranged and repaired, and adequate quarters for personnel will be provided. It is expected that this project will obviate the necessity for additional construction at other neuropsychiatric hospitals in the Middle West.

U. S. Public Health Service

Medical Director Claude C. Pierce, relieved from duty in the bureau of the public health service, Washington, D. C., and directed to Paris, France, for duty in the office of the American consul general and to assume supervisory charge of service activities in Europe.

Asst. Surg. William H. Gordon, relieved at Ellis Island, and assigned to duty at the marine hospital, Baltimore.

Asst. Surg. Melvin H. Pike, relieved at the marine hospital, New York, and assigned to the marine hospital, Baltimore.

Asst. Surg. W. P. Dearing, relieved at the marine hospital, Stapleton, N. Y., and assigned at the National Institute of Health, Washington, D. C.

Passed Asst. Surg. Gordon A. Abbott, relieved at Baltimore and assigned at the marine hospital, New Orleans.

The following have been promoted and commissioned as passed assistant surgeons in the regular corps of the service:

Thurman H. Rose
Victor H. Vogel
Joseph G. Pasternack
Robert H. Onstott
William G. Workman
Alfred B. Geyer
Roy E. Butler
R. C. Arnold
John L. Wilson
George G. Van Dyke

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 14, 1934.

The Registration of Foreign Physicians

The destruction of liberty of opinion in certain European countries and the persecution of scientists and physicians has produced an influx of refugees into this country, mainly from Germany. The medical refugees aroused some concern in the British Medical Association, which was expressed at the conference of oversea members, held during the Dublin meeting last July. It was said that any foreign national who was a graduate of medicine in his own country might after a short period of clinical study at a British school obtain registration in this country and practice in the colonies and dominions. The dominions committee of the association asked the council to consider the advisability of approaching the qualifying bodies with regard to the time required by those bodies for study in this country by foreign medical graduates prior to the qualifying examination and to urge that these should be required to undergo a minimum of three years' clinical study in great Britain or Ireland before being admitted to the qualifying examination. At a recent meeting of the council of the association it was stated that the total number of foreign qualified physicians in this country going through the short course which entitled them to take the final examination of one examining body—the Conjoint Board of Scotland—was approximately 180. Of those who qualified, 150 were expected to remain in Great Britain and Ireland. An attempt would be made to place them judiciously, if they were Jews (which all of them were not) in cities where there was a large element of Jewish population. Of the remainder some might go to South America, but there was every reason to believe that none would go to Australia, New Zealand or South Africa. Therefore the problem was not that of safeguarding the dominions and colonies from persons qualified by reason of a short period of study but of dealing with the position of 150 persons at the most who would be settling in this country during the next eighteen months. The length of time one of the qualifying bodies allowed persons to study in this country before taking their final examination was the subject of consideration by a good many persons and conferences had taken place between the qualifying bodies. The council of the British Medical Association is definitely of the opinion that foreign medical graduates should be required to undergo a minimum of three years' clinical study in Great Britain or Ireland before they are admitted to a qualifying examination.

The British Graduate Medical School

The formation of the British Postgraduate Medical School to supply a long felt want, a medical school and hospital devoted to postgraduate teaching worthy of the metropolis of the empire, has been described in previous letters. Appointments to the staff have now begun with three professorships. Dr. F. R. Fraser has been appointed professor of medicine. He is at present university professor of medicine at St. Bartholomew's Hospital. Graduating at Edinburgh in 1910, he was appointed assistant in medicine at the Hospital of the Rockefeller Institute, New York, in 1912, and assistant physician to the Presbyterian Hospital in 1914. In the war he was consulting physician to the Rhine army. In 1920 he became assistant director of the medical professional unit at St. Bartholomew's Hospital and later in the same year director in succession to Sir Archibald Garrod. In 1925 he revisited the medical schools in the United States and Canada at the invitation of the Rockefeller Foundation. In 1927 he delivered the Goulstonian lectures at the Royal College of Physicians on cardiac dyspnea. In 1928 he lectured in Australia on the invitation of the Melbourne Postgraduate Committee. In 1933 he again visited the United States as Abraham Flexner lecturer at Vanderbilt University. He has written principally on poliomyelitis, heart disease and exophthalmic goiter.

Dr. James Young has been appointed professor of obstetrics and gynecology. He is obstetric physician to the Edinburgh Royal Maternity Hospital and gynecologist to the Edinburgh Royal Infirmary. Since 1920 he has been lecturer in clinical obstetrics and gynecology in the University of Edinburgh. He is the author of a well known textbook on gynecology and he has collaborated in the Combined Textbook of Obstetrics and Gynecology, which has emanated from the Scotch school. He has devoted special attention to maternal mortality and reported on the maternity services of Holland, Denmark and Sweden. He has investigated the toxemias of pregnancy and the histologic changes in the uterus during menstruation and pregnancy.

Dr. E. H. Kettle has been appointed professor of pathology. He is university professor of pathology at St. Bartholomew's Hospital. He was pathologist to the Cancer Hospital and assistant pathologist to St. Mary's Hospital. His textbook on the pathology of tumors is well known. His published work has been on cancer and splenomegaly, and he is now engaged in experimental researches on silicosis and other industrial diseases.

Research in Bacterial Chemistry

The Medical Research Council has made arrangements for combined chemical and bacteriologic investigation into the conditions that govern the life and multiplication of pathogenic microbes. These investigations have been made possible by cooperation of the Middlesex Hospital Medical School, the trustees of the late Lord Leverhulme and the Sir Halley Stewart Trust. Accommodation and facilities are being provided at the Middlesex Hospital in the Bland Sutton Institute of Pathology and the adjoining Courtauld Institution of Biochemistry. The investigation will be directed by Dr. Paul Fildes, F.R.S., who has been appointed a member of the scientific staff of the Medical Research Council. The other workers are Dr. G. P. Gladstone, Dr. G. M. Richardson and Mr. Knight. The arrangements took effect June 1 and the support given is sufficient for an initial period of five years.

The British Medical Association and the Use of Drugs by Midwives

The question of the use of drugs by midwives has been under the consideration of the British Medical Association for some time. In 1923 the council of the association represented to the Central Midwives Board that midwives should not be allowed to administer chloroform except under the supervision of a physician. The board agreed with this view. The association has also on many occasions protested to the Ministry of Health and to the Central Midwives Board against the assumption that a midwife should be allowed to administer drugs other than a simple aperient or ergot after delivery. Under the present regulations the midwife receives instruction in the use of drugs, but the association contends that she is thereby led to assume dangerous responsibilities, for which there is no real need. In the short time at her disposal, her training on this subject must obviously be directed merely to the immediate effect of a few drugs on certain conditions. There can be no training on the remote and general action of drugs on the patient—a thing requiring the training of the medical curriculum. Drugs that need to be administered during the course of a confinement, such as opium, chloral and solution of pituitary, are potentially dangerous. The association holds that conditions in which drugs of this nature seem to be needed are indications that a physician should be summoned.

The council of the association has informed the Ministry of Health and the Central Midwives Board that it views with apprehension the proposed extension of the freedom of the midwife to administer drugs on her own responsibility. The rule of the Central Midwives Board at present governing the use of drugs by midwives is as follows: "A midwife must not on her own responsibility use any drug unless in the course of her training she has been thoroughly instructed in its use and is familiar with its dosage and methods of administration or application. The board would regard the giving of pituitary extract before the birth of the placenta, except under a grave emergency, as treatment outside a midwife's province."

The Toll of the Roads

During the week ended June 30, 140 people were killed and 5,000 injured on the roads of Great Britain. This brings the total for the first six months of the year to 3,224 killed and 101,694 injured. In other words, eighteen people have been killed and 600 injured every day. In the last eight and one-half years 54,138 persons have been killed and 1,522,704 injured. The figures for the first six months of this year are an increase on those of the previous year for the same period, and every year for some time has shown an increase on the previous one. The following table gives the figures for the last eight years:

Year	Killed	Injured	Total
1926	4,886	133,888	138,774
1927	5,329	148,575	153,904
1928	6,138	164,838	170,976
1929	6,696	170,917	177,613
1930	7,305	177,895	185,200
1931	6,691	202,119	208,810
1932	6,667	206,450	213,117
1933	7,202	216,328	223,530

Memorial to Manson and Ross

The incorporation soon after the death of Sir Ronald Ross of the Ross Institute in the London School of Hygiene and Tropical Medicine was reported in a previous letter. The official ceremony took place at the school. The earl of Athlone, chancellor of the University of London, unveiled a memorial tablet to Sir Patrick Manson and a bust of Sir Ronald Ross. Lord Athlone said that Manson had the vision and courage to inspire teaching and research in tropical medicine. He was a pioneer in new paths of medicine. He left Scotland at 21, went to Formosa and worked there and in China for nearly a quarter of century in isolation. He discovered that the mosquito acted as a host in the transmission of filaria. He also discovered several new diseases and parasites of man. On returning home he founded the London School of Tropical Medicine. Sir Ronald Ross was inspired by Manson, the father of tropical medicine, to investigate his theory that the mosquito carried the germs of malaria. His success led to the investigation of insects as carriers of disease.

The Sterilization of Mental Defectives

It was stated previously, that a committee of experts appointed by the government to inquire into the sterilization of mental defectives reported unanimously in favor of voluntary sterilization. The matter next came before the Mental Hospitals Committee of the London County Council, which by a majority approved of this recommendation. This decision then came before the General Purposes Committee, which arrived at the conclusion that the facts in possession of the Council were not sufficient to warrant it in expressing an opinion. Finally the matter has just come before the whole council, when a discussion took place. In moving that the council support the unanimous opinion of the government committee, a member stated that it was a strong one, the voluntary aspect was emphasized and the treatment was hedged round by every safeguard. A growing percentage of mental defectives and their high fecundity were pointed out. However, a labor member moved an amendment that "the knowledge of the facts do not warrant the council in expressing an opinion." This was carried by 63 votes to 44, a majority which corresponds to the predominance of the labor party on the council. The party did not officially oppose sterilization but allowed a free vote. But, on the whole, the labor party is against sterilization, as it regards mental deficiency, like other social evils, as due to "the capitalist system" and to be remedied by getting rid of that. The labor member who moved the amendment said that the inheritance of mental deficiency had not been proved and suggested that unsatisfactory environmental conditions were the cause, for which of course he held capitalism responsible.

PARIS

(From Our Regular Correspondent)

June 13, 1934.

Urologists in High Favor; Faure an Exception

Prof. Jean-Louis Faure has been chosen a member of the Academy of Sciences, which is one of the five sections of the Institut de France. The Academy of Medicine, with its hundred members, created much later than the institute, does not form part of it. In the Academy of Sciences, in which one finds sections of mathematics, physics, chemistry and several others, the section of medicine and surgery has only six seats. Membership is much sought after, as a supreme distinction, by eminent physicians who already have been honored by the Academy of Medicine. The selection of members by a group consisting chiefly of methematicians, physicists and the like, who have little knowledge of medicine, is sometimes surprising. The public has often been malicious enough to remark that the institute, many of whose members are aged, showed a marked preference for specialists in urology, probably because they could use their services to care for their prostates and bladders. Also the three members who represent surgery in the "Institut" are nearly always urologists. Guyon and Bazy, for example, gained entrance without difficulty, although hardly representative of the science and art of surgery as a whole. An election was held three months ago in which Gosset, a comparatively young man, although he had performed many prostatectomies, was admitted on the first count, easily defeating Jean-Louis Faure and Hartmann. At the recent election Jean-Louis Faure was again a candidate, in competition with Hartmann and two young urologists, Marion and Chevassus. He won in the contest in spite of the fact that he is a gynecologist and hence unable to render any special service to the electing body. His success was therefore all the more meritorious. It is probable that the members have had their eyes opened to the fact that their traditional preference for urologists is a cause of many smiles. Jean-Louis Faure is, moreover, an eminent surgeon, aged 70, who succeeded Pozzi in 1919 in the chair of clinical gynecology at the Faculté médicale de Paris. His publications are numerous, and his lectures at the Hôpital Broca are highly appreciated. He has often represented France in foreign countries (particularly in America) at congresses and on scientific missions. He possesses a high literary culture and has published a book, "L'Ame du chirurgien," whose perfection of style and loftiness of thought would seem to mark him as a successful candidate for membership in another section of the "Institut"; namely, the French Academy.

The Disposal of Garbage

The problem of disposing of garbage from households has been solved differently in different countries. In Paris, where the garbage amounts to thousands of tons a day, household garbage is placed in metal receptacles at the curb, these being provided with tight fitting covers to keep out the rats. Before

dawn these collections of garbage are transferred to huge autotrucks and transported to crematories outside the city. The garbage is passed over screens in order to retrieve materials that are still usable. The remainder is burned in incinerators at a high temperature, which leaves only the mineral elements, and these are immediately transformed into bricks, which are sold as excellent construction material, which pays in part the great expense of this important sanitary service. At Aix-en-Provence another system has been adopted, which, by utilizing a process of spontaneous fermentation, secures a residue that does not need to be sterilized by high temperature but can be used in a different form. The household garbage of the city is transported to an establishment, where it is divided into several classes by means of interesting machines and is then transferred to large compartments, in which the material is allowed to ferment for twenty-one days, after which it is stored in its new form in a large warehouse and left for another month. It is later reduced by mechanical processes to a black powder resembling humus and termed "zymos." During the course of fermentation in the large compartments, the temperature reaches 80 C. (176 F.), which destroys absolutely the ova of parasites and all saprophytic or pathogenic organisms. Professor Carrieu and Dr. Papas emphasized that a general use of this method would do away with the accumulations of malodorous substances in areas just outside the city.

BERLIN

(From Our Regular Correspondent)

June 18, 1934.

Is a Federal Cancer Law Needed?

For some time there has been discussion, in this era of advanced health protection legislation in Germany, as to whether a law pertaining to cancerous disease should be enacted. The Düsseldorf dermatologist Prof. Thomas Schreus is taking special interest in the subject. The essential feature of his endeavors is to prepare the way for a publicity crusade by providing for free examination of all cancer suspects. It is evident, he says, that such free examination must form a basis of all cancer control. For no matter what remedy is employed after the disease is diagnosed, and irrespective of the potency of remedies that may be discovered, the prompt recognition and the early treatment of all cancerous persons must constitute the basis of all organized combating of cancer. Schreus takes a broader view of the situation than other authors (Professor Lönne, for example), who have confined their suggestions to the gynecologic aspects of the problem. Schreus recommends that the following features be added: 1. Issuance of a general warning, often repeated, to the whole population to submit to examination. 2. Assurance of the examination by an annually renewable gratuitous examination permit, given out by the krankenkasse or by the public authorities, for this would be scarcely feasible without legislative enactment. 3. Establishment of a fixed form of examination. In order to preserve all records in a systematic manner every German, on attaining age 40, should be provided with a record book, which should contain information on cancer, and a copy of the cancer protection law, and, finally, the questionnaire on hereditary and familial conditions. After the death of the holder these health record books should be turned over to the federal bureau of health. In the presence of cancer or suspected cancer, compulsory notification should be required. Care should be taken to provide physicians and medical students with adequate instructions. 4. Assurance of the necessary treatment for all persons affected—that is, a notification system with centrals at various bureaus.

Schreus scouted the idea that the distribution of health record books might awaken among the population a chronic fear of cancer and ventured that cancer and the fear of cancer together are not so bad as ignorance of cancer. For normal persons with a keen zest for life, who demand protection in this field as in all others, the health record book would be the talisman that would procure for them quiet sleep. It is not known that such legislative measures are being considered, but experts are emphasizing that predisposition to cancer is a concrete factor that must be reckoned with, and which today (for example, in the matter of advice to candidates for marriage) plays already a significant rôle.

Unrecognized Tuberculosis in the Storm Troops

Dr. Kattentidt pointed out before the Münchner Aerztlicher Verein recently that among the national-socialist storm troops and in the work camps there are many persons with open tuberculosis, although they are ignorant of the fact. These cases must be taken seriously, because the population of the work camps mingle closely, and the rural population is much more sensitive. Unrecognized tuberculosis is destructive because it has time to extend itself uncontrolled. Grave tuberculous processes may be found in persons who distinguish themselves in sport. There is a well known football player with tuberculous cavities, and a young woman who has made a record as a swimmer in spite of the fact that she is tuberculous. Exceedingly grave processes do not necessarily present manifestations that attract the attention of the bearer. About three fourths of the unrecognized cases of tuberculosis cannot be diagnosed either by percussion or by auscultation but only roentgenologically. The number of unrecognized cases of tuberculosis increases with every older age group. In Munich 27,000 students have been examined fluoroscopically in recent years. In every 200 students a case of open tuberculosis was found; in every fifty students extensive but healed scar tissue was observed, and in every fifteen students a small scar was noted. It is difficult to decide how best to combat the disease. The first measure should be a thorough chest examination for every person. Roentgen examination is especially important for physicians working among the storm troops and among athletes. No physician should say that a person is healthy until he has subjected him to a fluoroscopic examination. The systematic examination of the sputum is not always feasible, because few people seem to know that they have an expectoration. The danger of infection among the storm troops and in the work camps is greater than in the families. There will be many claims for damages against the state if the examinations made when candidates entered the work camps were not carefully done and did not exclude the unfit. A "light" work service is a misnomer, and only healthy persons should be enrolled. Urinalyses are likewise necessary, for in 1,500 examinations of urine fifteen serious urinary observations were made; for example, a renal tuberculosis, although the examinee did not feel ill. The serial examinations are cheap. In a day as many as 150 persons can be examined with the fluoroscope. Interpretation of the lights and shadows should be made by a physician with special training. The actual cost of such examination is about 20 cents per person. The method is not practicable if hospitals charge from 15 to 20 marks ($5.70 to $7.60, current). In all Germany there are probably 350,000 open cases of tuberculosis, which are susceptible of improvement or cure, whereas in the sanatoriums there are only 30,000 beds, many of which are vacant.

The Electrical Potential of the Skin in Relation to Colds

Professor Munk addressed recently the Berlin Medizinische Gesellschaft. In winter and in the transitional periods, disorders occur that, without discrimination, are grouped under the head of "colds." There is scarcely a medical school that has not advanced a theory concerning colds. Munk has reported

the outcome of experiments that clarify a previously unknown function of the skin. If one places an electrode at each of two points on the skin (for example, the forehead and the palm of the hand), he will observe a difference of potential that is measurable with the galvanoscope and remains constant during the lifetime of the person. Between two symmetrical points of the body there is no difference of potential.

Similar processes in plant physiology have long since been known. The system has a high degree of stability. Thus, in a multiple sclerosis patient in whom malaria treatment was tried, the potential difference remained the same during an increase of temperature from 37.1 C. to 40.1 C. If one checks the secretion of the sweat glands with atropine, or if one induces perspiration with acetylsalicylic acid, the potential difference does not change. These constants may be demonstrated also in the frog and in the guinea-pig. The constancy is, however, interrupted if one endeavors, as did Munk, to reproduce the process of taking cold by removal of the shoes, placing the feet in hot or cold water, or by exposure to draft of air. The act of sneezing is conceived of by Munk not only as due to removal of an unpleasant tickling sensation but also as a first reaction and warning. Through the act of sneezing the disturbed equilibrium of the electromotor force is restored. It is not known whether temperature stimuli or other currents produce these changes in the electromotor force. In any event, through the process of taking cold the system of electromotor force as a function of the skin is markedly disturbed—more than the heat regulatory apparatus.

Munk has conceived the possibility that, just as bacteria require a certain optimum, the undisturbed electromotor force of the skin constitutes a certain protective apparatus that makes the invasion and action of bacteria impossible.

BELGIUM

(From Our Regular Correspondent)

May 31, 1934.

The Social Services and the Hospitals

At the third Congrès international des hôpitaux, Dr. Daels of Ghent emphasized the importance of an understanding between the hospital and the medical social services and the public. The hospital must not assume a monopolizing attitude. It should recognize that certain diseases may be better treated at home than in the hospital. A clinical service is not complete if it is not aided by a visiting nurse who is familiar with the home and the financial situation of the family. It is desirable that the ward nurse give to the visiting nurse the most necessary information in the case in which urgent aid is needed. The hospital should not allow patients to be interrogated by several persons with regard to their financial situation. It is highly desirable that the ward nurse shall gain the confidence of persons whom she is to serve. Thus she will obtain from patients the necessary information more easily than a visiting nurse.

The private organizations giving medical and social aid are excellent, but they are, at the most, of secondary importance, for it is absolutely necessary that continuity of the aid be assured and that precise methods be employed in the investigations and the rendering of medical social aid.

The Antivenereal Crusade in the Hospitals

The third Congrès international des hôpitaux passed a series of resolutions that may have a significant result in the antivenereal crusade:

1. From a medical and social point of view, patients affected with syphilis and gonorrhea should be admitted to all general hospitals that have a qualified technical personelle. No moral distinction should be made between venereal patients and other patients, even though the former are treated at public expense.

2. The l'Union internationale contre le péril vénérien should be asked to study and report on the question as to what measures can be taken to bring about a closer union between the practicing physician and the hospital services concerning scientific progress in the diagnosis and treatment of syphilis and gonorrhea.

3. Because a large number of patients with syphilis and gonorrhea enter the hospitals in the services of internal medicine, gynecology, obstetrics and the like, and because the relations between syphilis and gonorrhea, and the acute diseases are often obscure, it is earnestly recommended that the custom be encouraged of asking the specialist in venereal diseases to participate in the examination of all obscure cases.

4. It should be emphasized and the prophylaxis of congenital syphilis should become universal in the hospitals through an active collaboration between the syphilologic service and the obstetric service.

The Red Cross in Luxemburg

The Red Cross in the Grand Duchy of Luxemburg has developed its program of action in a remarkable manner. It conducts each year an extensive publicity campaign and drive for members, and every week talks on hygienic subjects are broadcast under its auspices. Its visiting nurses go to adjacent foreign countries for graduate work in their profession. It has organized a prenatal consulting service and a dispensary of mental hygiene at Luxemburg, a day nursery at Esch-sur-Alzette, and at Redange a center for placement in families.

The detection of cancer cases is taken over by the Red Cross, and arrangements for their treatment have been provided at Strasbourg. Active collaboration exists between the Red Cross of Luxemburg, on the one hand, and the Ligue antituberculeuse, the Ligue antialcoolique, the Association des camps d'été and the Société d'hygiène populaire et scolaire. It provides aid for persons in distress—particularly for German refugees. The Red Cross has begun the construction near Luxemburg of a maternity, with a home for mothers and a school for the training of midwives.

BUCHAREST

(From Our Regular Correspondent)

June 21, 1934.

The Death of Professor Cantacuzino

The death of Prof. Jean Cantacuzino of Bucharest University, a renowned bacteriologist, has been announced. A descendant of the once ruling Cantacuzino family, he attended the secondary schools in Paris, where later he acquired the title of doctor of philosophy in the natural sciences. In 1894 he became a doctor of medicine. From 1894 to 1896 he was professor of animal morphology at the philosophical faculty of the University of Jassy, Rumania. On the invitation of Professor Metchnikoff he went to the Pasteur Institute in Paris in 1896 and there carried on research until 1902, when he was offered the position of vice director. He did not accept this position because in Bucharest the chair of experimental pathology had become vacant and he was invited to accept it. He remained in this position until he died.

In 1905, together with Professor Athanasiu, he founded the Rumanian Biological Society and in the same year launched the Revista stiintelor medicale, which is regarded as the foremost medical journal in Rumania. In 1908 he was appointed director of the board of public health. In 1913 he acted as chief epidemiologist in the Bulgarian war. In 1920 he founded the serum and vaccine institute named after him and in 1928 launched another periodical, the *Archives mensuelles roumanins de pathologie expérimentale*, appearing in French. He brought to life the Rumanian Society for the Prophylaxis of Tuberculosis. In 1931 he was minister of public health. His favorite

study was the mechanism of immunity. His book on the rôle of phagocytosis in the struggle of the organism against the cholera vibrio aroused wide interest.

Professor Cantacuzino was the first to transmit scarlet fever infection to laboratory animals, which he did in 1911. He was a zealous advocate of the Calmette vaccination. Up to 1932, half a million babies received the B C G vaccine; 350,000 of these were in France, 70,000 in Rumania and 80,000 in the rest of the world. His serum and vaccine institute is conducted in the most exemplary manner and under the most scientific supervision. In this institute, three university professors and thirty physicians are employed. Cantacuzino's hobby was music and art. He owned one of the greatest art collections in Europe. His simple views were reflected in his will, in which he requested an unpretentious funeral.

A New Medical Monthly

Sibiul medical is the name of a new medical monthly published in Sibiu, Transylvania. The editorial committee consists of Drs. Capitanovici, Filipescu, Preda and Stoichita. The paper is going to deal with scientific problems, but its chief topics will be social hygiene and propaganda for a more effective public health service. The paper is independent and is not subordinated to any magistrate or association. The first issue appeared on the first of June. The price of subscription is only 100 lei (one dollar) a year.

The Military Service of Physicians

Up to now the Rumanian military system has favored physicians who have not had to undergo military drill. They have been obliged to serve only after having graduated, and then only in military hospitals for four weeks, with the salary and rank of a lieutenant. Now the service will be extended to one year, the four weeks being insufficient to learn military medical practice.

The First Psychoanalytic Society in Rumania

Under the name Societate Română de Cercetări Psychologice a scientific association was founded last month for the purpose of furthering psychoanalytic science in Rumania. Professor Radulescu-Motru has been elected president of the association, which already has forty-five members. It is going to meet monthly.

The University of Cluj

The University of Cluj made public data for the 1933-1934 school year showing that 4,469 students enrolled, an increase of 345 over the previous year. Of these, 984 were medical and 387 pharmaceutic students; 2,722 were Rumanians (60 per cent), 922 Magyars (20 per cent), 447 Jews (10 per cent), 445 from Saxony (7 per cent), 112 Russians (2 per cent), 2 French and 6 Czechoslovakians. The budget of the university for the year amounted to 65,307,180 lei (about $653,071).

The New Polish Registration Law

Rumania is an immediate neighbor of Poland. Their common frontier is only a few hundred miles. In southern Poland, near the Rumanian frontier, there is no university, but there is one nearby in Czernowitz, in Rumania. Some Polish students study in Czernowitz. According to the new law, the number of foreign diplomas has been restricted to 10 per cent of the number of diplomas issued within the country. Since in Poland about 300 physicians get a diploma annually, only thirty foreign diplomas will be recognized. Foreign applicants for recognition have to attend three terms and pass all examinations at a Polish university. The new law also prescribes that those who have graduated abroad may file petition for recognition only after the lapse of ten years and those who will graduate in 1936 after the lapse of twenty years. This stringent measure was made on the instigation of the medical chambers to limit overproduction of physicians. According to authoritative statistics the ratio of physicians to population in Wolhynia and Little Poland is 1:6,000. A committee has been formed in Paris to protest against the Polish law and to do everything possible for its repeal or at least mitigation of its provisions.

NETHERLANDS

(From Our Regular Correspondent)

May 31, 1934.

Europeans in the Dutch East Indies

Dr. C. W. F. Winckel has published a study on the European population of the Dutch East Indies. During the eighteenth and nineteenth centuries, the mortality was high. It was not easy to collect statistics, for only in recent years has a bureau of statistics been organized. In 1920, 91.7 per cent of the Europeans in the Dutch East Indies were Netherlanders, 4.7 per cent were Americans and Australians, 2.5 per cent were Japanese, 0.3 per cent were Chinese, and 0.8 per cent belonged to groups of Europeans of the second generation. Since Jan. 1, 1934, it has no longer been the department of justice that has charge of the collection of statistics on Europeans but the Central Bureau of Statistics. The same is true with regard to the collection of statistics on the causes of deaths. These are first reported to the local health officer, who forwards them to the central bureau.

STUDY OF THE SITUATION ACCORDING TO THE DIFFERENT AGE GROUPS

There are more European men than women in the East Indies. Not until one approaches age 70 does one find more women than men. The majority of the European population belongs to the 20-56 age group. The number of children increases with the group of school age, which is explained by the system of adoption and legislation. The number of aged persons is small because many persons return to their native country at the end of their career.

BIRTHS

The number of births is difficult to establish because of the large number of emigrants who return to their native country with their children after completing their sojourn in the Indies, and because of the large number of illegitimate children who are recognized and legitimized. Over a period of three years there were 22,374 births, which represents a birth rate of 31.18 per thousand of population. In 1926 the infant mortality was 65.4 per thousand, and in 1929-1931 it was 69.2 per thousand.

CAUSES OF DEATH

Among the chief causes of death may be mentioned typhoid, malaria and dysentery. Measles is less grave than in the Netherlands. Tuberculosis is chiefly of the pulmonary type. Malignant tumors are rare. Biliary cirrhosis is frequent. Many persons die from an unknown cause, since not every one calls in a physician during his last illness.

Classification of Causes of Death

	Number of Deaths per 10,000 of Population
1. Typhoid	186
2. Malaria	181
3. Dysentery	119
4. Pulmonary tuberculosis	540
5. Apoplexy	309
6. Cirrhosis of liver	41
7. Smallpox	4
8. Pneumonia	362
9. Unknown causes	1,101

It appears that (1) the mortality rate of Europeans in the Dutch East Indies is one and one-half times that of the Netherlands; (2) the high mortality is due to certain acute diseases (malaria and abdominal infections); otherwise the mortality would be no higher than that of the Netherlands; compared

with the past, when the colonies were in an alarming state, the present mortality rate may be regarded as ideal, although the organization of public health still leaves much to be desired (the improvement dates more particularly from the last two decades, which is not surprising when it is recalled that hygiene in general, and tropical pathology in particular, are just beginning to bear fruit), and (4) mortality is not the only basis for an estimate of the state of health of a people, but it is an important factor.

Malaria in the Rhine Delta

At a meeting of the health section of the League of Nations, Mr. Swellengrebel discussed malaria in the Rhine delta in the Netherlands. If the Rhine delta has become a malarial region, it is because it has been utilized for a purpose for which nature did not intend it. The formation of tracts of low land has brought about the creation of hiding places for the larvae of Anopheles. The systematic retrieving of land areas has its dark and its bright side. Such areas are more or less unhealthful but present nevertheless certain sanitary advantages. These advantages have accrued not to the retrieved area but to the hinterland. Each new tract has served to protect its hinterland against encroachments of the sea. Likewise, the surface waters of the hinterland have lost their salinity, and Anopheles maculipennis has been able to establish itself here. Consequently new areas must be recovered in order to protect the old areas; that is to say, one creates constantly new lurking places by suppressing those that existed previously. The recovery of lands, which is going on at the present time in the region of the Zuider Zee, represents an effort to remedy this evil by eliminating the malaria of the hinterland without the new areas becoming malarial. This method has for its basic purpose the creation, in the center of four "polders," of an immense reservoir protected from the sea by a dike extending from the province of North Holland to that of Friesland. If this experiment succeeds, the province of North Holland, at present the principal focus of malaria in the Netherlands, will be the first to get rid of its brackish waters and of its fauna of Anopheles maculipennis, var. atroparvus.

Institute for Research on Heredity

A Netherlands institute for research on the characters of heredity in man and the biology of the races was recently created. It is divided into three sections: (1) biogenealogy, (2) medical statistics on the examination of hereditary characters, and (3) anthropologic study on the biology of the races.

BUENOS AIRES

(From Our Regular Correspondent)

June 1, 1934.

Recording the Cardiac Sounds

Orías and Braun Menendez made graphic records of the cardiac sounds in 100 medical students from 19 to 23 years of age by the method of Wiggers and Dean. Only the first and second sounds were present in thirty-four; the third sound was clearly recorded during the final instants of diastole in thirty-two; an auricular sound, besides the two normal sounds, was recorded in three; four sounds, the auricular and the first, second and third sounds, were perfectly recorded in nine. The recording of the phonocardiogram, simultaneously with the venous pulse, is a great advantage. They analyzed, by means of the simultaneous recording of the phonocardiogram and the venous pulse, the cardiac sounds of twenty patients with gallop rhythm who had clinically improved. In about half of the cases the extra sound occurred at the final moment of diastole simultaneously with the final portion of the descending line of the V wave of the phlebogram. In one fourth of the cases the extra sound occurred at the moment of the auricular contraction, simultaneously with the a wave of the phlebogram. The moment of production of the gallop rhythm has been determined by the simultaneous registration of this rhythm with the electrocardiogram. However, by this method one is liable to interpret as presystolic murmurs those which the phlebogram proves to be related to the diastole.

Phrenicectomy

Phrenicectomy is frequently resorted to in the treatment of pulmonary tuberculosis. Drs. Finochietto and Vaccarezza have developed a technic using incisions only 8 to 10 mm. long. They have performed the operation in nearly 300 cases without hospitalizing the patient. The operation is not difficult if special instruments are used and the technic is carefully followed. The scar is insignificant.

Hospital Physicians

The law providing for promotion for physicians in the hospitals was received with great enthusiasm in spite of some of its queer sections. For instance, each physician must either present some work during the year or publish two medical articles a year. But when the time for enforcing this comes, there are many exceptions, and several new appointments have been made without fulfilling the regulations. This fact has brought about criticism and uneasiness among the physicians of the hospitals.

University News

Dr. F. Lejarza has been appointed head of the University of Litoral.

Dr. Piñero García was appointed director of the School of Medicine but he resigned; Dr. C. Alvarez was then given the appointment.

The appointments made by Dr. Izzo in 1928 were annulled and the chairs occupied by Drs. Abalos, Rueda, Coulin, Vignolles and some others are now vacant.

A contest has been opened in the University of Cordoba to appoint a director of the institute and a professor of physiology. Drs. O. Orías, D. Barilari and A. Sartori are candidates under consideration.

The Academia Nacional de Medicina of Buenos Aires has appointed Drs. Romagosa of Cordoba and E. Finochietto, P. Chutro and A. Zabala of Buenos Aires honorary academicians.

Deaths

Dr. Angel Gallardo, rector of the University of Buenos Aires, member of the Academy of Medicine of Buenos Aires, minister of foreign affairs and formerly representative of Argentina to several countries, aged 67, died, May 13.

Dr. José Lignieres, member of the Academy of Medicine of Buenos Aires, a French bacteriologist, pupil of Nocard, recently died. He was opposed to the general vaccination of children with B C G vaccine. He believed that only children from tuberculous parents should be vaccinated with this vaccine.

Dr. Carlos Heuser, a well known radiologist, died, aged 56.

Marriages

WALTER SWAN BURRAGE, Brookline, Mass., to Miss Katherine Sanford Riley of Worcester, June 22.

CHARLES EDGAR BALLARD, Belmont, N. C., to Miss Marie Almeda Wyatt of Easley, S. C., in June.

WILLIAM BERMAN to Miss Ruth Jonette Einson, both of Yonkers, N. Y., June 15.

JOHN JAMES DELANY, Galveston, Texas, to Miss Jenneva Jaynes, Temple, June 3.

HARRY LOUIS BERMAN to Miss Ella Stein, both of Chicago, June 24.

Deaths

Theodore H. Weisenburg ✠ Philadelphia, professor of neurology at the University of Pennsylvania Graduate School of Medicine since 1907, and editor in chief of the *Archives of Neurology and Psychiatry* from its foundation in 1919, died suddenly, August 3, of carcinoma of the liver, aged 58. Dr. Weisenburg, a native of New York, was graduated in medicine from the University of Pennsylvania School of Medicine in 1899. In 1901 he went to the Philippine Islands as assistant surgeon in the United States Army, where he served for two years, returning to begin practice in Philadelphia in 1903. He was appointed instructor in neurology and neuropathology at his alma mater in 1904 and became professor of neurology in the graduate school in 1907. Dr. Weisenburg held various offices in organizations concerned with his specialty. He served as secretary of the Section on Nervous and Mental Diseases of the American Medical Association for two years, 1905-1907, and in the latter year was made chairman. In 1917 he was president of the American Neurological Association and at the time of his death was president of the Association for Research in Nervous and Mental Diseases. He was also a member of the American Psychiatric Association. During the World War Dr. Weisenburg served in the Army Medical Corps. His hospital affiliations included the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, Graduate Hospital of the University of Pennsylvania, Wills Hospital and Philadelphia General Hospital. In addition to his editorial activities, Dr. Weisenburg contributed to scientific journals many articles on nervous and mental diseases.

THEODORE H. WEISENBURG, M.D.,
1876-1934

Henry **Anthon Lewis Ryfkogel** ✠ San Francisco; University of California Medical Department, San Francisco, 1894; fellow of the American College of Surgeons; clinical professor of surgery, Stanford University School of Medicine; past president of the California Medical Association; formerly member of the state board of medical examiners; medical superintendent of the San Francisco Polyclinic; for many years visiting surgeon to the San Francisco Hospital; aged 60; died, June 11, of heart disease.

James **Vance Ferguson** ✠ El Dorado, Ark.; Tulane University of Louisiana School of Medicine, New Orleans, 1923; fellow of the American College of Surgeons; past president of the Union County Medical Society; on the staff of the Henry C. Rosamond Hospital; aged 33; died, July 8, at the Mayo Clinic, Rochester, Minn., of complications, following perforation of an ulcer of the stomach.

George **Benjamin Collier** ✠ New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1915; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; on the staffs of the Southern Baptist Hospital and the Eye, Ear, Nose and Throat Hospital; aged 44; died, July 9, of acute gastro-enteritis and acute nephritis.

Jacob **H. Heimark,** Moorhead, Minn.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1903; member of the Minnesota State Medical Association; at one time secretary of the Clay-Becker Medical Society; formerly health officer of Moorhead; on the staff of St. Ansgar Hospital; aged 57; died, June 25, in Minneapolis, of heart disease.

Frank **William Romaine** ✠ Major, M. C., U. S. Army, Spokane, Wash.; Georgetown University School of Medicine, Washington, D. C., 1905; fellow of the American College of Surgeons; served during the World War; entered the medical corps of the regular army as a captain in 1920 and in 1929 was made a major; aged 56; died, May 7, of heart disease.

Joseph **Mayer Rice,** Philadelphia; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1881; editor of the *Forum,* 1897-1907; author of "The Public School System of the United States" and "Scientific Management in Education"; aged 77; died, June 24, in the Jefferson Hospital, of heart disease.

Peter Taylor Grant ✠ Grand Rapids, Mich.; University of Louisville (Ky.) School of Medicine, 1909; member of the American Academy of Ophthalmology and Oto-Laryngology; served during the World War; aged 50; on the staff of St. Mary's Hospital, where he died, July 16, of streptococcic infection.

Taylor Hurst, Hazard, Ky.: University of Louisville School of Medicine, 1909; member of the Kentucky State Medical Association; member of the board of education; part owner of the Hurst-Snyder Hospital; aged 54; died, July 5, in St. Joseph's Hospital, Lexington, of carcinoma of the transverse colon.

Daniel Laurence Healy, Framingham, Mass.; Harvard University Medical School, Boston, 1898; member of the Massachusetts Medical Society; formerly member of the school committee; on the staffs of the Framingham Union and Natick hospitals; aged 62; died, June 22, of chronic myocarditis.

William Newbold Watson ✠ Philadelphia; Medico-Chirurgical College of Philadelphia, 1892; aged 69; at various times on the staffs of the Children's Hospital, Methodist Episcopal Hospital and the Joseph Price Memorial Hospital, where he died, July 1, of carcinoma of the colon.

Solomon Horwitt, New York; Cornell University Medical College, New York, 1907; member of the Medical Society of the State of New York; on the staffs of the Bronx Maternity and Mount Sinai hospitals and the Vanderbilt Clinic; aged 55; died, July 1, of cancer of the stomach.

Edwin Sylvester Cornwell ✠ La Salle, Mich.; University of Louisville (Ky.) School of Medicine, 1897; past president of the Monroe County Medical Society; aged 67; on the staff of the Monroe (Mich.) Hospital, where he died, June 30, of interstitial nephritis and myocarditis.

Eugene P. Ellenson ✠ Chippewa Falls, Wis.; Rush Medical College, Chicago, 1892; past president of the Chippewa County Medical Society; for three years health officer of Chippewa Falls; on the staff of St. Joseph's Hospital; aged 65; died, June 17, of heart disease.

Herbert Miller Robertson, Santa Ana, Calif.; Southern Homeopathic Medical College, Baltimore, 1897; member of the California Medical Association; for many years member of the state board of medical examiners; aged 61; died, June 1, of carcinoma of the stomach.

Hallward J. Thornby, Moorhead, Minn.; Minneapolis College of Physicians and Surgeons, Medical Department of Hamline University, 1909; member of the Minnesota State Medical Association; on the staff of St. Ansgar Hospital; aged 52; died, June 17.

Wilford J. Austin, Spokane, Wash.; University of Minnesota Medical School, Minneapolis, 1905; member of the Washington State Medical Association; aged 59; died suddenly, June 19, of diabetes, adenoma of the prostate, perirectal abscess and pulmonary embolism.

George Hillard Hill ✠ Worcester, Mass.; Harvard University Medical School, Boston, 1894; fellow of the American College of Surgeons; formerly on the staffs of the Memorial and Worcester City hospitals; aged 65; died, May 18, of pneumonia.

Robert Abraham Douglas, Tulsa, Okla.; Starling Medical College, Columbus, 1892; member of the Oklahoma State Medical Association; served during the World War; aged 67; died, June 16, in the A. C. H. Hospital, Shawnee, of angina pectoris.

Joseph Herman Karsch, Memphis, Tenn.; Vanderbilt University School of Medicine, Nashville, 1896; member of the Tennessee State Medical Association; aged 59; died suddenly, June 14, while in Baltimore, of cardiovascular renal disease.

Samuel S. Kittrell, Louisville, Tenn.; Chattanooga Medical College, 1894; member of the Tennessee State Medical Association; aged 66; died, June 6, in the Riverside-Fort Sanders Hospital, Knoxville, of otitis media and streptococcic septicemia.

Robert Lee Wilkins, Alexandria, Va.; University of Virginia Department of Medicine, Charlottesville, 1901; member of the Medical Society of Virginia; aged 68; on the staff of the Alexandria Hospital, where he died, June 10, of septicemia.

James Sterling Dimmitt ✠ Sherman, Texas; University of Texas School of Medicine, Galveston, 1921; fellow of the American College of Surgeons; on the staff of the Wilson N. Jones Hospital; aged 43; died, June 26, of Hodgkin's disease.

Harry Whipple Johnson, Bangor, Maine; College of Physicians and Surgeons, Baltimore, 1908; member of the Maine Medical Association; aged 54; died, April 16, of septicemia, acute nephritis and empyema of the gallbladder.

William G. Shaw ✠ Wagram, N. C.; College of Physicians and Surgeons, Baltimore, 1892; past president of the Scotland County Medical Society; for many years member of the county board of education; aged 66; died, June 11.

Gustof Adolph Persson, Mount Clemens, Mich.; Illinois Medical College, Chicago, 1898; member of the Michigan State Medical Society; aged 58; died, May 19, in the Harper Hospital, Detroit, of pneumonia, following an operation.

John Allen Hamer, Clio, S. C.; Medical College of the State of South Carolina, Charleston, 1904; member of the South Carolina Medical Association; aged 54; died, July 11, in a hospital at Charleston, of chronic nephritis.

Aram Garahed Hejinian ✠ Anamosa, Iowa; Rush Medical College, Chicago, 1893; fellow of the American College of Surgeons; bank president; on the staff of the Mercy Hospital; aged 71; died, July 5, of coronary thrombosis.

William David Dorminy, Fitzgerald, Ga.; Atlanta College of Physicians and Surgeons, 1900; member of the Medical Association of Georgia; for many years president of the board of education; aged 63; died, June 4.

Isaac Errett Wolfe ✠ Coeburn, Va.; University of Louisville (Ky.) School of Medicine, 1909; served during the World War; aged 58; died, June 20, in St. Elizabeth's Hospital, Richmond, of carcinoma of the sigmoid.

Allen Jasper Harter, Allendale, S. C.; Medical College of the State of South Carolina, Charleston, 1887; member of the South Carolina Medical Association; aged 69; died, June 27, of carcinoma of the throat.

Dan German Jr., Franklin, Tenn.; Vanderbilt University School of Medicine, Nashville, 1931; member of the Tennessee State Medical Association; aged 26; was instantly killed, July 1, in an automobile accident.

Eugene Walters, Winnipeg, Manit., Canada; University of Minnesota Medical School, Minneapolis, 1895; Manitoba Medical College, Winnipeg, 1907; on the staff of the Victoria Hospital; aged 69; died, May 9.

Albee Amos Skeels, St. Albans, Vt.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1897; served during the World War; aged 61; died, June 20, of diabetes mellitus and myocarditis.

Daniel Robert Lee, Arcadia, Neb.; State University of Iowa College of Medicine, Iowa City, 1890; aged 77; died suddenly, June 18, in Fort Collins, Colo., of angina pectoris and bronchopneumonia.

William H. Pounds, Paulsboro, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1886; formerly mayor of Paulsboro; aged 84; died, June 2, of cardiac decompensation and chronic nephritis.

Robert Coleman Rudy, Detroit; University of Michigan Homeopathic Medical School, Ann Arbor, 1886; aged 71; died, June 13, in the Grace Hospital, of cerebral hemorrhage and arteriosclerosis.

William H. Kinnicutt, Cleveland; Cleveland College of Physicians and Surgeons, Medical Department of Ohio Wesleyan University, 1898; aged 69; died, June 21, of lobar pneumonia.

Thomas Henry O'Toole ✠ Norwood, Mass.; Jefferson Medical College of Philadelphia, 1897; aged 58; on the staff of the Norwood Hospital, where he died, April 4, of intestinal obstruction.

Miles Dawson Kelly, Lonoke, Ark.; University of Arkansas School of Medicine, Little Rock, 1913; aged 54; died, June 11, of uremia, carcinoma of the stomach and chronic nephritis.

Andrew Beattie Eadie, Hemet, Calif.; Trinity Medical College, Toronto, Ont., Canada, 1886; Bellevue Hospital Medical College, New York, 1886; aged 74; died, May 29, of angina pectoris.

Rolando Kuehn, Philadelphia; Jefferson Medical College of Philadelphia, 1883; aged 74; died, May 11, in the Philadelphia General Hospital, of arteriosclerosis and heart disease.

Charles A. Thompson, Raymond, Ohio; Starling Medical College, Columbus, 1887; member of the Ohio State Medical Association; aged 72; died, June 6, of cerebral hemorrhage.

Albert Victor Widman, Newark, N. J.; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1887; aged 73; died, June 1, of cardiorenal disease.

William Shidaker Wire, Norwood, Ohio; University of Cincinnati College of Medicine, 1930; aged 30; died, June 2, in the Good Samaritan Hospital, Cincinnati, of heart disease.

John Conant Stewart, York Village, Maine; Dartmouth Medical School, Hanover, N. H., 1877; also a lawyer; aged 84; died, June 4, in the York Hospital, of coronary thrombosis.

Ezra Oscar Price, Ladoga, Ind.; Kentucky School of Medicine, Louisville, 1889; aged 68; died, July 3, in a sanatorium at Martinsville, of cerebral hemorrhage and arteriosclerosis.

Lawrence George Geraghty, Jersey City, N. J.; Georgetown University School of Medicine, Washington, D. C., 1932; aged 29; was killed, May 17, in an automobile accident.

Alexander Roth Robertson, Pass Christian, Miss.; Tulane University of Louisiana Medical Department, New Orleans, 1895; aged 66; died, April 28, of cerebral hemorrhage.

Isaac Calvin Hollinger, Boonville, Ind.; College of Physicians and Surgeons, Baltimore, 1882; served during the World War; aged 79; died, June 14, of cerebral hemorrhage.

Robert J. Woods ✠ Smithville, Mo.; Central Medical College of St. Joseph, 1898; aged 60; died, May 4, in the Grandview Sanitarium, Kansas City, Kan., of heart disease.

Ernest Frederick Robinson, Newton, Mass.; University of Buffalo School of Medicine, 1891; aged 64; died, June 6, of agranulocytic angina, septicemia and pneumonia.

Francis William Hartley-Hellyer, Baltimore (licensed in Maryland in 1894); aged 76; died, May 23, in the University Hospital, of hypertensive cardiovascular disease.

Elon Howard Nelson, Mount Healthy, Ohio; Miami Medical College, Cincinnati, 1903; member of the board of education, aged 58; died, May 13, of heart disease.

Benjamin C. Harris, Lobata, W. Va.; Kentucky University Medical Department, 1905; aged 55; died, July 12, in Hot Springs National Park, Ark., of heart disease.

George W. Wallis, Fayetteville, Ga.; Atlanta Medical College, 1886; member of the Medical Association of Georgia; aged 72; died, June 17, of diabetes mellitus.

John Ralph Good, Chaplin, Sask., Canada; University of Manitoba Faculty of Medicine, Winnipeg, 1919; aged 41; died, May 3, in a Moose Jaw (Sask.) hospital.

Thomas E. Alyea, Earlville, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; also a druggist; aged 81; died, June 15, of shock, as the result of a fall.

John J. Comer, Willis, Kan.; Rush Medical College, Chicago, 1893; member of the Kansas Medical Society; aged 67; died, May 15, of carbolic acid poisoning.

John Julius Rudolph, Hoboken, N. J.; Baltimore University School of Medicine, 1898; aged 57; died suddenly, May 25, in Roselle Park, of heart disease.

J. Emile Daigneault, Sherbrooke, Que., Canada; School of Medicine and Surgery of Montreal, 1912; aged 48; died, July 11, of coronary thrombosis.

Warren Brown Hill, Mount, Va.; Baltimore University School of Medicine, 1892; aged 72; died, May 13, of carcinoma of the neck, chest and abdomen.

Solomon Francis Rudolf, Green Bay, Wis.; Northwestern University Medical School, Chicago, 1905; aged 54; died, May 15, of cerebral thrombosis.

George Townley Pryor ✠ Sheffield, Pa.; University of Buffalo School of Medicine, 1882; aged 74; died, May 26, of chronic myocarditis.

Leon M. Prichard, Catlettsburg, Ky.; Hospital College of Medicine, Louisville, 1897; aged 61; died, May 17, of chronic myocarditis.

Matthew M. Hill, Winfield, Kan.; Rush Medical College, Chicago, 1901; aged 63; died, July 6, of cerebral hemorrhage.

George Oscar Pratt ✠ Detroit; Detroit College of Medicine, 1905; aged 67; died, June 5, of carcinoma of the stomach.

Andrew J. Coey, Chicago; Chicago Medical College, 1880; aged 76; died, June 29, of carcinoma of the larynx.

Bureau of Investigation

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

[EDITORIAL NOTE: The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the composition; (4) the type of nostrum; (5) the reason for the charge of misbranding and (6) the date of issuance of the Notice of Judgment—which may be considerably later than the date of the seizure of the product.]

Collins' Plasters.—Potter Drug & Chemical Corp., Malden, Mass. Composition: Essentially oleoresin of red pepper, starch, and rubber spread on a cloth fabric attached to two metal strips, one of zinc, the other of copper. For rheumatism, weak back, stomach cramps, simple bone fractures, etc. Fraudulent therapeutic claims.—[*N. J. 20568; February 1934.*]

St. John's (I. L.) Magnetic Brand Oil.—Frank L. Bridinger, Tiffin, Ohio. Composition: Essentially small amounts of turpentine oil and rosin, with chloroform, alcohol and water. Cure-all. Fraudulent therapeutic claims.—[*N. J. 20571; February 1934.*]

Stirizol.—Stirizol Co., Inc., Ossining, N. Y. Composition: Essentially borax and common salt with small amounts of essential oils including menthol, thymol, eucalyptol and methyl salicylate. Not antiseptic as vaginal douche, as claimed. Fraudulent therapeutic claims.—[*N. J. 20574; February 1934.*]

Menthymoil.—Crezoin Chemical Co., Merchantville, N. J. Composition: Essentially petrolatum and liquid petrolatum with 2.5 per cent of volatile oils, including menthol, thymol and eucalyptol. For asthma, hay fever, bronchitis, tonsillitis, etc. Fraudulent therapeutic claims.—[*N. J. 20575; February 1934.*]

Crezoin Balsam Formula No. 1.—Crezoin Chemical Co., Merchantville, N. J. Composition: Essentially an alcoholic solution of volatile oils including menthol and eucalyptol, with gums such as benzoin and tolu, and creosote. For asthma, hay fever, bronchitis, tonsillitis, etc. Fraudulent therapeutic claims.—[*N. J. 20575; February 1934.*]

Rawleigh's Rheumatic Tablets.—W. T. Rawleigh Co., Freeport, Ill. Composition: In each tablet, potassium iodide (0.06 gram), sodium salicylate (0.03 gram) and plant drug extract. Fraudulent therapeutic claims.—[*N. J. 20579; February 1934.*]

Moses' Herb Expectorant.—Moses Remedy Co., Cambria, Va. Composition: Essentially extracts of plant drugs, including horehound and wild cherry, with sugar and water. For coughs, croup, asthma, bronchitis, etc. Fraudulent therapeutic claims.—[*N. J. 20583; February 1934.*]

Moses' Herb Discovery.—Moses Remedy Co., Cambria, Va. Composition: Essentially extracts of plant drugs, alcohol (7.2 per cent by volume), sugar and water. For asthma, blood diseases, female disorders, tuberculosis, etc. Fraudulent therapeutic claims.—[*N. J. 20583; February 1934.*]

National Yeastolized (Medicated) Salt.—National Feeders Corporation, Tiffin, Ohio. Composition: Contained little, if any, yeast, cod-liver oil, or epsom salt and no potassium iodide. Adulterated because below the professed standard under which it was sold, and misbranded because of false and misleading statements as to composition.—[*N. J. 20584; February 1934.*]

O. K.-Lax.—Live Food Products Co., Hollywood, Calif. Composition: Essentially ground leaves, barks, roots and fruits, including a laxative drug. For catarrh, asthma, diabetes, etc. Fraudulent therapeutic claims.—[*N. J. 20587; February 1934.*]

Griswold's Family Salve.—Sisson Drug Co., Hartford, Conn. Composition: Essentially a lead compound such as lead oleate, and rosin. For boils, ulcers, tumors, ague, etc. Fraudulent therapeutic claims.—[*N. J. 20588; February 1934.*]

A. C. H. Ku-Rill.—A. C. Hynd Corporation, Buffalo, N. Y. Composition: Essentially small amounts of common salt, carbolic acid, amyl acetate and acetone, alcohol and water, colored with a pink dye. "Germicide." Fraudulent therapeutic claims.—[*N. J. 20590; February 1934.*]

Ka-Di-Ok Compound.—LeDure Medicine Co., Columbus, Ohio. Composition: Essentially extracts of plant drugs including a laxative drug, glycerin, alcohol and water. Cure-all. Fraudulent therapeutic claims.—[*N. J. 20592; February 1934.*]

Van's (Billy B.) Pine Tree Ointment.—Commercial Laboratories, Inc., Newark, N. Y. Composition: Petrolatum, small amounts of camphor, menthol, and pine oil, colored with a green dye. For catarrh, eczema, piles, whooping cough, etc. Fraudulent therapeutic claims.—[*N. J. 20595; February 1934.*]

Yum for Headache.—Ex-Lax Manufacturing Co., Brooklyn, N. Y. Composition: Contained in each tablet 2 grains each of phenacetine and aspirin and ⅓ grain of caffeine. For la grippe. Fraudulent therapeutic claims.—[*N. J. 20598; February 1934.*]

Sheppard's Magic Liniment.—C. L. Sheppard Sanatorium & Remedy Co., Findlay, Ohio. Composition: Essentially a light petroleum oil with a small amount of turpentine oil. Cure-all. Fraudulent therapeutic claims.—[*N. J. 20600; February 1934.*]

Dickson's Compound for the Kidneys and Bladder.—Dorothy Dawn, Inc., Chicago. Composition: Tablets containing methenamine, a laxative drug, resins and juniper oil, coated with sugar, starch and calcium carbonate and colored with iron oxide. Fraudulent therapeutic claims. [*N. J. 18085; August 1931.*]

Bennett's New Life.—Bennett Medicine Co., Norfolk, Va. Composition: Essentially epsom salt, iron chloride, small quantities of podophyllum, rhubarb and leptandra, traces of salicylic acid, and methyl salicylate, with about 91 per cent of water. For tonic purposes, stomach troubles, etc. Fraudulent therapeutic claims.—[*N. J. 18087; August 1931.*]

Tonall.—Tonall Medicine Co., Lancaster, Pa. Composition: Extracts of sarsaparilla, senna, uva ursi, licorice, nux vomica and wild cherry, with glycerine, alcohol and water. For stomach and kidney disorders. Fraudulent therapeutic claims.—[*N. J. 18092; August 1931.*]

Sul-So-Tar.—Industrial Research Association, Mobile, Ala. Composition: Mostly water, containing sulphur dioxide (0.162 per cent). For lung, stomach and kidney disorders. Fraudulent therapeutic claims. [*N. J. 18094; August 1931.*]

Tanlac Rheumatism Treatment.—International Proprietaries, Inc., Dayton, Ohio. Composition: Liniment containing 45 per cent of alcohol, with chloroform, methyl salicylate, camphor, eucalyptus oil, mustard oil, soap and water; tablets containing aspirin (4.2 grains each) and extracts of plant drugs. Fraudulent therapeutic claims.—[*N. J. 18099; August 1931.*]

Brigadell's Camphorole.—Camphorole Laboratories, Atlantic City, N. J. Composition: Ointment containing petrolatum, camphor, menthol and eucalyptol. For catarrh, hay fever, etc. Fraudulent therapeutic claims. —[*N. J. 18100; August 1931.*]

Vitalizing Tablets.—Parker Medicine Co., Tampa, Fla. Composition: Extracts of plant drugs including a laxative such as cascara sagrada, with nux vomica and damiana, coated with calcium and iron compounds. "Tonic" and "cure-all." Fraudulent therapeutic claims.—[*N. J. 20173; June 1933.*]

Vapex.—E. Fougera & Co., Inc., New York. Composition: Essentially volatile oils such as menthol and lavender, with alcohol (approximately 65 per cent by volume) and water. For nasal disorders. False and misleading therapeutic claims. Misbranded also because alcohol content not conspicuously declared in some cases, or at all, in others—[*N. J. 20556—February 1934.*]

LaSalle's Life Salt.—LaSalle Medicine Co., Los Angeles. Composition: Essentially compounds of sodium and potassium, tartrates, carbonates, phenolphthalein, citric acid, and sugar. For stomach and liver disorders, etc. Fraudulent therapeutic claims.—[*N. J. 20557—February 1934.*]

LaSalle's Compound Cough Syrup.—LaSalle Medicine Co., Los Angeles. Composition: Essentially extracts of plant drugs (sugars 71 per cent), alcohol (5.5 per cent by volume) and water. Fraudulent therapeutic claims.—[*N. J. 20557—February 1934.*]

LaSalle's Antiseptic Powder.—LaSalle Medicine Co., Los Angeles. Composition: Essentially zinc sulphate (13.8 per cent), boric acid (85 per cent), salicylic acid (0.6 per cent) and volatile oils including thymol. For vaginal disorders, etc. Adulterated because below professed standard of strength and quality. Misbranded because of fraudulent therapeutic claims.—[*N. J. 20557—February 1934.*]

Tablets Flu-Enza.—Direct Sales Co., Inc., Buffalo, N. Y. Composition: 2.79 grains acetphenetidin and 2.8 grains of salol per tablet, and a small proportion of mercuric iodide. For influenza, pneumonia, etc. Adulterated and misbranded because acetphenetidin content wrongly declared and because of fraudulent therapeutic claims.—[*N. J. 20558—February 1934.*]

Simmons (R. H.) "SM" Antiseptic Powder.—S. M. Laboratories, Inc., Seattle. Composition: Essentially boric acid and zinc sulphate with small amounts of salicylic acid and menthol. and a trace of berberine. Not germicidal as claimed. Misbranded and adulterated. Fraudulent therapeutic claims.—[*N. J. 20565—February 1934.*]

Simmons (R. H.) "SM" Vaginal Suppositories.—S. M. Laboratories, Inc., Seattle. Composition: Essentially a cocoa butter with small amounts of quinine sulphate and boric acid. Fraudulent therapeutic claims.—[*N. J. 20565—February 1934.*]

Simmons (R. H.) Neofem.—S. M. Laboratories, Inc., Seattle. Composition: Essentially alcohol, glycerin, phenolphthalein, and volatile oils, including apiol and savin oil, and water, flavored with licorice and colored with chlorophyll. For female disorders. Fraudulent therapeutic claims.—[*N. J. 20565—February 1934.*]

Simmons (R. H.) Neofem Capsules.—S. M. Laboratories, Inc., Seattle. Composition: Essentially extracts of plant drugs including a laxative drug and small amounts of apiol and savin oil. Female regulator. Fraudulent therapeutic claims.—[*N. J. 20565—February 1934.*]

Simmons (R. H.) Silver and Mercury.—S. M. Laboratories, Inc., Seattle. Composition: Essentially water containing colloidal silver and mercury stabilized by a protein. For disorders of the genito-urinary tract. Fraudulent therapeutic claims.—[*N. J. 20565—February 1934.*]

You-Tha-Gan.—You-Tha-Gan Co., Houston, Texas. Composition: Essentially sugar and water with a small amount of hydriodic acid. Aphrodisiac. Fraudulent therapeutic claims.—[*N. J. 20566—February 1934.*]

Andes.—International Products Co., Inc., Lexington, Ky. Composition: A small amount of extracts of plant drugs including a laxative drug and a bitter drug, with sodium acetate (0.2 per cent), sugar (1.8 per cent), alcohol (6.7 per cent by volume) and water (approximately 91 per cent). "System Purifier and Tonic." Fraudulent therapeutic claims. —[*N. J. 20566—February 1934.*]

Correspondence

ARTIFICIAL RESPIRATION

To the Editor:—Many lives are being saved annually by the Red Cross and industrial organizations by teaching the "prone, face down method" of artificial respiration for drownings, electric shock and asphyxia. However, I believe this method could be made more effective by the simple expedient of placing the head "down hill" when feasible on a 10 to 15 per cent incline, as all physicians know the extreme value of letting the head down in shock on the operating table. The cerebral vital centers get more blood and under increased pressure and the Lewis pendulum swing will often restore when all else fails. Furthermore, the added drainage from the lungs and stomach make it more necessary in drownings.

I have recently performed artificial respiration by this method on conscious people and there is no possible hindrance because of the weight of the abdominal viscera against the diaphragm. I presume that from 1 to 3 per cent more recoveries might be possible by this simple expedient of letting the head down during resuscitation and yet it would not complicate the treatment when it is entrusted to lay people—the mere placing of the body with the head down hill when feasible, artificial respiration to proceed nevertheless from the beginning until the inclined position may be effected. All physicians and surgeons with whom I have mentioned this have the same opinion of its added advantage over the level position of the subject.

As these organizations are principally of lay people I believe that the medical profession should carefully consider this expedient and instruct them accordingly.

James G. Poe, M.D., Dallas, Texas.
Anesthesiogist, Baylor University Hospital.

STIMULATION OF SUBCORTEX OF THE BRAIN

To the Editor:—In The Journal, April 28, appeared an editorial on a new method of physiologic research based on the article of Light and Chaffee (*Science* **79**:299 [March 30] 1934). In the editorial you made no mention either of Hess of Zurich, who reported to the International Physiological Congress at Boston in 1929 a method of stimulating the subcortex electrically in more or less normal animals, or of the paper of R. B. Loucks of this laboratory. I enclose a reprint of the latter's work. Loucks described a technic similar to that of Light and Chaffee three months earlier.

W. Horsley Gantt, M.D., Baltimore.

Comment.—We are glad to refer to the facts in relation to the interesting new procedures that remove "the restrictions of time, anesthesia and restraint from experimental explanation of functions susceptible to electrical excitation," as described in the editorial "A New Method of Physiologic Research" (The Journal, April 28, p. 1400). At the Boston meetings of the International Physiological Congress in 1929, Prof. W. R. Hess of the physiologic institute at the University of Zurich demonstrated a method of stimulating the subcortex of the brain. The demonstration is referred to in the abstracts of communications to the congress published in the *American Journal of Physiology* in October 1929, but no details are given. They can be found, however, in a monograph by Hess (Beiträge zur Physiologie des Hirnstammes: I. Teil. Die Methodik der lokalisierten Reizung und Ausschaltung subkortikaler Hirnabschnitte, Leipzig, Georg Thieme, 1932). The scheme consists in the surgical attachment of stimulating devices to the skull of cats. Wires were employed, however, to connect the animal with the requisite external apparatus. The author stresses the advantage of his technic in the circumstance that the animal is free to move and all ordinary restraint is averted. Cats were used as subjects of investigation. Hess admits that monkeys would be superior but he states that he has avoided this animal because of the large expense involved, as well as the highly developed "organization" of the animal, which would afford special difficulties in interpretation. On the other hand, Light and Chaffee, whose work was reviewed in the editorial, have used monkeys with remarkable success and with advantages that must be evident. The principle of "remote control," which the Yale University studies especially stress, differed from Hess's technic in the circumstance that the latter could exercise such influence only through the use of wired electrical connection.

The investigations of Loucks (Preliminary Report of a Technic for Stimulation or Destruction of Tissues Beneath the Integument and the Establishing of Conditioned Reactions with Faradization of the Cerebral Cortex, *J. Comp. Psychol.*, **16**:439 [Dec.] 1933), to which our correspondent refers, make no reference to the prior work of Hess, which has just been reviewed. It criticizes the principle of the latter as follows:

> In experiments where it is desired to stimulate electrically, over a period of weeks, tissues located beneath the integument, wires brought out through the skin may prove very troublesome. Fine wires are easily broken; heavy wires may induce sloughing or infection. To obviate these inconveniences, it has been found feasible to bury a collodion coated coil just beneath the skin, and to lead insulated wires from this coil to electrodes located at the point to be stimulated. When the primary of a common laboratory inductorium is laid on the skin, external but adjacent to the subcutaneous coil, the electromagnetic field passing through the skin induces a faradic current in the collodion coated coil, which is transmitted along the insulated leads to the electrodes.

The technic of the Baltimore investigators therefore represents a step in advance, as the inductorium is "laid on the skin" instead of being attached through wires brought through the skin. Dogs have been used as the experimental animal. Proximity of the inductorium to the animal is apparently essential. In the scheme of Light and Chaffee (Electrical Excitation of the Nervous System—Introducing a New Principle: Remote Control, Preliminary Report, *Science* **79**:299 [March 30] 1934) the animal is placed within the magnetic field entirely detached and free from the specially designed primary circuit. This fact clearly justifies the designation of their method as a new principle of remote control.

All the newer devices represent a step in the direction of progress in fields that have not been easy to cultivate because of the experimental difficulties involved. There are real merits in all the investigations, and the investigators are deserving of praise. We shall await with interest the reports of the progress made by all the competing procedures.—Ed.

THERAPY OF CONJUNCTIVITIS

To the Editor:—Permit me to add one or two random, but I think practical hints to the excellent article on the therapy of conjunctivitis by Dr. Sanford R. Gifford in The Journal, July 7. In the treatment of gonorrheal ophthalmia, of infants and adults, as well, the chlorine compounds are very valuable, either as "drops" or diluted, as irrigation fluid. My teacher the late Dr. Emil Gruening used the official, Aqua Chlorinii (*recenter preparata*) diluted to one-tenth strength. Today there are the various calcium and soda chlorine preparations, chloramine, surgical solution of chlorinated soda, and so on, which seem to have an almost specific action against the gonococcus. Pressure on the cornea with resultant necrosis is often due, at least in part, to hot and tensely swollen lids with retention of pus secretion. A liberal tarsotomy may work wonders. Free bloodletting does no harm, and what might have seemed a desperate remedy is in experience amply justified by the results. In irrigating "babies' sore eyes" pus is apt to spurt, especially when an attempt is made to force the lids apart with the

fingers. "It is the physicians' duty to instruct nurses" of this hazard and to advise wearing protective goggles as well as to inculcate the danger of the gonococcus to adult eyes and the need of scrupulous cleanliness both for self protection and to avoid spreading this serious infection. In addition to the other etiologic factors of conjunctivitis mentioned in Dr. Gifford's summary, minute foreign bodies should not be forgotten. This should always be thought of and excluded—or eliminated—especially in case of unilateral conjunctivitis. The symptoms are often quite misleading but there are few things a patient resents as much as the overlooking of a foreign body and continued treatment without removal of the cause.

PERCY FRIDENBERG, M.D., New York.

HEAVY METALS IN SYPHILIS

To the Editor:—The article "Standard Treatment Procedure in Early Syphilis," by John H. Stokes and others (THE JOURNAL, April 21), seems somewhat ambiguous on the question of treatment with heavy metals.

On page 1271 the statement is made that "from the data thus presented it appears, then that the modern treatment of early syphilis should be continuous; . . . and in accordance with the principles generally recognized in the treatment with heavy metal for one year after all symptoms and signs of the disease have disappeared."

The authors can scarcely mean that this would imply; viz., that heavy metal is given for a full year without interruption. Moreover, this is not in accordance with the scheme published on the same page.

Perhaps one of the authors would be willing to clarify this.

FRANKLIN P. PYLES, M.D., Rio De Janeiro, Brazil.

[The question was referred to the authors of the article, who reply:]

To the Editor:—Attention should be called first to the fact that the statement as rendered by the inquirer is a misquotation. The actual wording reads:

> The modern system for the treatment of early syphilis must be continuous; it must employ an arsphenamine and a bismuth compound, the latter intramuscularly; it must call for not less than twenty and unless special resistiveness is encountered, hardly more than thirty injections of the arsphenamine; and in accordance with the principles generally recognized in the treatment of the disease the system should call for continued treatment with heavy metal for one year after all symptoms and signs of the disease have disappeared.

Taken in its entirety, this statement means that treatment should be continuous during the period when arsphenamine and bismuth compounds are being used. If, after the thirty injection arsphenamine requirement with alternating courses of a bismuth compound is satisfied, symptoms of the disease still remain, heavy metal treatment should be continued (not "continuous") "in accordance with the principles generally recognized in the treatment of the disease," which means that when a heavy metal is used alone for any purpose there must be an alternation of periods of treatment with periods of rest appropriate to the drug and preparation used, to prevent the development of serious cumulative effects. It was taken for granted that it would not be necessary to explain this elementary principle in the use of heavy metal alone.

Work on this material recently completed indicates that a prolongation of alternating continuous arsphenamine and heavy metal therapy is preferable to the tapering off with heavy metal alone outlined in this presentation. This, the quoted schedule provides for and the criticism that schedule and text do not exactly correspond must be answered by saying that both are within the range of variation permitted by present known facts and authoritative opinion.

JOHN H. STOKES, M.D., ET AL.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POSSIBLE INFECTION WITH POLIOMYELITIS AT SWIMMING POOL

To the Editor:—A 10 year old girl, apparently in perfect health, went swimming in a private pool two days before she became ill with anterior poliomyelitis. She died four days after the onset. She had not been out of town and the only other case had occurred one month previously. No new cases have occurred in the ten days since her death. Is it likely that she contracted the disease in the pool? Is it likely that those in the pool with her were exposed? If so, was the virus transmitted through the air by droplet infection or through the water? How long would the virus be active in a pool in which the chlorine is kept between 0.2 and 0.5 parts per million? Have any cases been traced to transmission by swimming pools? Our policy in regard to the pool will be affected by your answer. Please omit name.

M.D., Colorado.

ANSWER.—It is not likely that the patient contracted infantile paralysis from the water in the pool. She may have contracted the disease from contact with carriers at the pool. It is possible that persons at the pool with the patient may have received infection from her by the droplet method. There is good reason to believe that the virus would be destroyed in a short time in the chlorinated water of the pool. So far as is known, cases of infantile paralysis have not been traced to the water in swimming pools.

PERENNIAL TREATMENT OF HAY FEVER

To the Editor:—A white man, aged 29, came to me in May 1933 with a history of fall hay fever. He had symptoms for the first time in 1932. He was found to be very sensitive to the Ambrosiaceae group and was given eighteen injections between May 15 and September 15. The doses began with 6 units and were increased gradually until he received 3,600 units for the fifteenth, sixteenth, seventeenth and eighteenth doses. I used Parke, Davis and Company's Bio 364. He agreed to take a treatment monthly but did not come in regularly, receiving doses October 17, December 6, April 13 and June 5. Each of these doses was 3,600 units. He had no symptoms during the regular fall season and had only slight reactions to the other doses. He wants to continue treatment and I should like to know what schedule of doses he should receive. Please omit name and address.

M.D., Iowa.

ANSWER.—The perennial treatment of hay fever is being adopted more and more by most specialists in this field. It has the advantage of keeping up the patient's immunity throughout the year. It is also more convenient for the patient and for the physician, for by its use higher dosages may be reached, should they be desired, than by the preseasonal method formerly in vogue. However, in order to be effective, injections must be given more or less regularly, and most men feel that the interval between treatments should be about two weeks rather than a month. This shorter interval markedly lessens the chances of a constitutional reaction, that is, asthma, hay fever or urticaria, or combinations, which may occur after injections of pollen extracts.

It has been noticed that the patient under consideration took injections in October, December, April and June, apparently with no reactions. The fact that he escaped constitutional reactions with such long intervals intervening between injections would seem to point to the fact that either he is only mildly sensitive to the ragweeds (Ambrosiaceae) or else the extract used for injections had deteriorated. Perhaps it was not kept at a sufficiently low temperature. Such long intervals, especially the one between December and April, amounting to more than four months, are to be vigorously condemned, as they lead to constitutional reactions in most cases in which potent extracts are used.

The question of the proper procedure at this time will depend on the extract used. If the same one is to be injected, the 3,600 unit dosage would probably be all right, and if there is no reaction the dosage may be increased once a week until the hay fever season arrives; that is, about the middle of August. If treatment is to be continued then, which is advisable, the highest dose reached may be repeated once a week until the end of the hay fever season and then once in two weeks all the year round.

If, on the other hand, a new extract is to be used, it is strongly advisable to reduce the dose sharply to not more than 1,800 units at the maximum. The dosage may then be increased once again if no reactions occur. Solutions of epinephrine hydrochloride should always be available in case of a constitutional reaction and the patient should not be permitted

to leave the office for at least twenty or thirty minutes after injections.

An average increase of dosage is about 50 per cent, not over. It is better to err on the side of safety than to push the dose too rapidly.

In addition to the series of injections of ragweed pollen extract, it is advisable in all hay fever and asthma cases to have complete skin tests carried out, including pollens, epidermals, foods and miscellaneous substances. About two out of three hay fever cases will give positive reactions to proteins besides the pollens. The elimination of these proteins during the hay fever season will increase markedly the percentage of successful results.

PIGMENTATION AFTER BISMUTH THERAPY

To the Editor:—I have a 28 year old colored patient with syphilis, whom I have been treating with neoarsphenamine and preparations of bismuth. Ever since he has been getting the bismuth preparations, numerous black spots have appeared in his skin, presumably deposits of metallic bismuth. Can anything be done to make these spots disappear? These spots appeared after the fourth or sixth intramuscular injection of bismuth salicylate in oil. I have tried other forms of bismuth, an aqueous tartrate solution and also metallic bismuth. In each instance the spots have become more numerous. However, there is no evidence of any discoloration of the gums. Apparently the mouth and gums have escaped any deposition. Please omit name.

M.D., Virginia.

ANSWER.—In certain papular syphiloderms a pigmentation may be left at the site of the papules after both arsenical and bismuth therapy. Such pigmentation generally disappears within a few months to a year. The query also arises whether the patient has been taking any form of phenolphthalein, which may also cause such pigmentation—independently of either syphilis or heavy metal therapy. It is true, however, that isolated examples of pigmentation of the skin following bismuth therapy of syphilis are reported in the literature. A good review of the subject appears in Jadassohn's Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer **18**:466, 1928. Courceux and Boutelier's patient, after arsphenamine and bismuth therapy, developed an urticaria which, in leaving, left pigmented spots. Queyrat's patient, after bismuth injections, had pigmented spots the size of the palm over the buttocks. Buschke's patient, with large papular syphilids, had black pigmented spots several months after on the site of all the former syphilids. Brytscheff's patient, with an arsphenamine dermatitis, recovered with a course of bismuth therapy but a strong pigmentation was left, as the result of deposits (?) of bismuth in the skin. Feldmann had a similar case in which three months following treatment there were deep brownish black spots. Microscopic examination showed in the subpapillary layer of the skin dark brown masses, which impregnated the endothelium of the vessels and which he took to be deposits of bismuth; but no chemical examination of the deposits was made and it is quite possible that they were simply pigmented cells or granules.

The inquirer's case is interesting and deserves further study. The patient may be treated for the time being with courses of arsphenamine or neoarsphenamine and alternating courses of mercuric salicylate injections or mercury inunctions. It would be well to remove sections of skin from such pigmented spots and have them examined by a competent dermatosyphilologist. Microchemical tests would help much to reveal the true type of pigment present.

DIABETES INSIPIDUS IN PREGNANCY

To the Editor:—A primigravid woman, aged 22, in previous good health, has developed diabetes insipidus during the sixth month of pregnancy. She is of the tall, thin, asthenic type. She drinks about sixty glasses of water every twenty-four hours and passes from 3½ to 4 gallons of urine during this time. A stereoroentgenogram of the skull shows no deepening of the sella turcica. The blood sugar is normal. Posterior pituitary powder intranasally has thus far not controlled the symptoms, although treatment has been started and the dosage will have to be increased. What complications, if any, can one expect at the time of labor? Would there be any tendency to hemorrhage after the placenta is delivered, through inability of the uterus to contract owning to this condition? Would this condition tend to diminish the severity of the uterine contractions? And should any other treatment be given in addition to postpituitary extract? Please omit name and address.

M.D., California.

ANSWER.—Diabetes insipidus is extremely rare during pregnancy, and individual cases are worthy of being reported. The textbooks by De Lee and Williams and the large system of Halban and Seitz on the biology and pathology of women do not even mention the association of this disease and pregnancy. In women who have diabetes insipidus the genital organs remain morphologically and functionally intact unless there are gross changes in the hypophysis. Hence there should be no difficulties during pregnancy, labor or the puerperium. This is borne out in the few reported instances. In the case reported by Anselmino and Hoffman (*Zentralbl. f. Gynäk.* **54**:2061 [Aug. 16] 1930) the patient was afflicted with diabetes insipidus during two pregnancies and was free from the disease between gestations. Aside from the excessive thirst and the extraordinarily profuse output of urine, the patient had no discomforts. Labor was uncomplicated both times. The first child died for an unknown reason shortly after birth but the second, born at full term, remained alive and healthy. The subjective and objective symptoms of the diabetes insipidus disappeared suddenly during the first few days of the puerperium. In the case reported by Artaud (*Bull. Soc. d'obst. et de gynéc.* **22**:196 [Feb.] 1933), labor started spontaneously at seven and a half months and was quickly completed. The only complication was a laceration of the fourchette in spite of the fact that the fetus weighed but 1,300 Gm. The author attributed the tear to dryness of the tissue due to the elimination of large amounts of fluid from the body. The puerperium was normal and the symptoms of the diabetes insipidus disappeared after labor. Theoretically there is danger of starting premature labor by administering posterior pituitary hormone. Artaud purposely avoided giving his patient solution of pituitary because of this fear, yet his patient had a spontaneous premature termination of pregnancy. In addition to giving posterior pituitary preparations, it is advisable to administer soporifics, so that the patient's sleep may not be disturbed much by urination. Prophylactically, posterior pituitary substance should be given immediately after delivery of the baby.

A few years ago, Hann expressed the view that in diabetes insipidus there is not only an insufficiency of the posterior hypophysis but also a disturbance in the function of the anterior hypophysis. Jacobi elaborated on this idea and came to the conclusion that there was an antagonism between the anterior and posterior pituitary lobes in controlling the water balance of the body. If the function of the anterior pituitary lobe increased unduly, diabetes insipidus resulted. In the case reported by Anselmino and Hoffman, the disease disappeared suddenly on the fifth day. This is the day on which the Aschheim-Zondek pregnancy test usually becomes negative following labor and indicates the day on which the increased activity of the anterior pituitary lobe ceases.

ARTIFICIAL INSEMINATION

To the Editor:—I will appreciate it if you will give me all the details of the best and most practical method of performing artificial insemination. Please omit name.

M.D.

ANSWER.—Before undertaking insemination, it is important to make a careful pelvic examination to rule out the presence of infection in the vulva, the vagina, the cervix or the fallopian tubes. Of course, insemination should not be performed in the presence of any infection. Furthermore, before resorting to this procedure it must be certain that the tubes are patent, and this can readily be determined by the Rubin test. Assuming that the wife is suitable for insemination, a careful examination of the spermatozoa must be made to be sure they are viable. Furthermore, there must be no evidence of infection in the semen.

The husband and wife should be informed that attempts to impregnate the woman artificially will most likely have to be carried out many times over a period of months. Even then there may not be a successful result. The most favorable time to carry out this procedure is the ten days midway between the first day of one menstrual period and the first day of the next expected menses. The ideal time for conception to take place is at the time of ovulation, which usually occurs about midway between menstrual periods. Since ovulation may occur any time from the tenth to the eighteenth day of the cycle and since the exact day for any particular woman cannot as yet be determined definitely, it is advisable to inseminate three, four or five times during these ten days. The husband should be instructed to wash the penis with soap and water before coitus and the wife should take a sodium bicarbonate or salt water douche. There are four methods of procuring semen: masturbation, coitus interruptus using a small jar, coitus condomatus and natural coitus followed by aspiration from the vagina. The most aseptic method, and the one that is not too obnoxious, is to have a small sterilized jar at hand before intercourse. At the time of the orgasm the semen should be ejaculated into the jar. The latter should be kept moderately warm or cool and immediately brought to the physician's office. The patient is placed in the lithotomy

position as for a vaginal examination and the vagina is carefully cleansed. The cervix is exposed with a bivalve speculum and the external os is further cleansed. However, it is not advisable to apply any antiseptic, because this may destroy the spermatozoa that are to be injected. The cervix is grasped with a tenaculum, and a uterine cannula is gently inserted into the uterine cavity. The semen in the jar is drawn up into a luer syringe and 1 or 2 cc. of it is deposited in the uterine cavity very slowly. If the semen is injected too quickly it will be expelled by uterine contractions. After the injection is performed, the cannula should be removed slowly and the patient should lie quiet on the examining table for about thirty minutes. It is best to examine some of the semen just before each insemination to make certain that it is satisfactory.

ANGINAL PAIN

To the Editor:—A man, aged 70, has a mitral musical murmur of the heart. The heart is only slightly enlarged. The blood pressure is normal. He has had pain in the chest for the past four years. He speaks of it as a soreness in the chest rather than a pain. He has been taking glyceryl trinitrate tablets for relief. Also, diathermy is being used over the chest, 1,000 milliamperes for a period of thirty minutes once or twice a week, which appears to give some relief. About half an hour after eating, even though he is not exercising, the discomfort comes in the chest. Please explain the probable cause of pain at this time. Will you also advise as to the best treatment and what value and benefit might one expect from surgical treatment.

THEODORE DODD, M.D., Steubenville, Ohio.

ANSWER.—The symptoms complained of are probably due to attacks of angina pectoris and do not necessarily bear any relation to the mitral lesion. Anginal pain is often described as a "soreness" and need not be either acute or severe. Such pain is more prone to occur after meals. It is assumed to be due to a blood supply to the heart that is inadequate for the needs at the moment. Such a change in the blood supply may be due to vascular disturbances in the heart muscle or to a decrease in the coronary flow resulting from coronary vasoconstriction or may be due to passive changes in the coronary flow consequent on changes in the systemic blood pressure.

The patient should be placed on an easily digestible diet and one that will not cause gas. He should be instructed to rest before meals and to rest for an hour or so after meals.

As regard medication, the use of the purine base diuretics is to be advised. They offer a greater probability of help than any other medication. They tend to dilate the coronary vessels and to increase the coronary flow. Their continued use has been shown by Smith to increase coronary anastomoses and collateral circulation. They do not relieve pain but they tend to improve the underlying condition. Their use should be persisted in for months, even if no relief is experienced at first. They are best taken during the meals, to avoid untoward symptoms.

QUARANTINE IN SCARLET FEVER

To the Editor:—A child with scarlet fever develops an otitis media, which is further complicated by a mastoiditis. The mastoid cells are drained by operation. The child slowly improves but has a purulent discharge for several months. At what time during this period of convalescence do you consider it safe to release this child from quarantine so that other children can come to the home and this child be allowed, with safety, to enter other homes? Please omit name.

M.D., Illinois.

ANSWER.—Health authorities insist that scarlet fever patients shall be quarantined until all discharges, including those from the ear, have ceased. There is no arbitrary time after which ear discharges following scarlet fever are free from danger. Disastrous outbreaks of scarlet fever have resulted from the introduction of a patient with such a discharge, which had persisted many months, into a group of susceptible children. The infectious property of the discharge resides in the specific sacrlet fever streptococcus. So long as it is present, the discharge is a source of danger. Its presence can be determined only by a bacteriologic examination. When cultures from the discharge on blood agar plates no longer show colonies of hemolyzing streptococci, it may be considered that the danger is over. These negative cultures must be secured several days in succession, and caution must be used not to make the cultures near the time when antiseptics have been introduced into the ear. While not all hemolyzing streptococci are scarlatinal, in the absence of facilities for testing their specific character, as shown by their serologic reactions and toxin production, those in discharges which follow scarlet fever must be considered as probably specific.

CARBON DISULPHIDE POISONING—DERMATITIS FROM FORMALDEHYDE

To the Editor:—A local concern, which manufactures caps for bottles made from cellulose, the process being similar to that used in the manufacture of rayon, is having trouble with the men who work in the "viscose" department of the plant. After the wood fiber sheets are removed from the shredder they are put in a constant temperature room for two days and then into a tank containing carbon disulphide. The workmen complain of becoming dizzy, their heads seem to swell, a numbness and tingling sensation spreads to the hands and down the legs to the feet, and they feel as though they were drunk. This sensation soon passes off if they can get out into the open air but it has created a marked mental reaction in three of the men, in that they have a perfect horror of returning to the job. In fact, one man left the work and has never returned, even for his pay. I have talked to several of the men in regard to this fear, and they seem at a loss to explain this reaction. One man, however, stated that he believed it was merely his nerves. I was talking to the wife of one of the men who has been in this department for about two months, and she said that her husband had become increasingly irritable and had lost his appetite and did not sleep soundly at night. This particular man stated that the main reaction was his dread of returning to work for his shift, stating that he would do almost anything if he did not have to go back to that smell again. I went out to the plant and inhaled enough of the gas as to experience the same sensation, and I found that it was similar to the inhalation of ether and gave me a sensation like that of an "ether jag." In the *American Journal of Public Health and Nation's Health* (**20**: 598 [June] 1930) is discussed the hazards of hydrogen sulphide in industry. I presume that the effects from carbon disulphide are similar to those produced by hydrogen sulphide. As the company is building a new plant and is anxious to safeguard the employees in this department, I would appreciate any information you can give me in regard to the prevention of this poisoning and the treatment, especially of these nervous mental symptoms. In another department, where girls work to sort, cut and pack the finished caps, there has been a skin disorder that has proved most annoying. These girls are handling wet cellulose caps which have been soaked in a solution of water, glycerin and about 1 per cent formaldehyde. They first notice patchy, papular eruptions usually occurring on the backs of the hands between the fingers and on the lower third of the forearms. These patches vary in size from the head of a large pin to areas about 30 mm. in diameter. These patches consist of small bright red papules, which itch to a moderate degree and then may disappear except between the fingers, where the skin becomes indurated, fissured and quite painful. I have never seen the primary lesion, as I have but recently been asked to help out with their difficulty, nor have I seen the conjunctivitis, which I believe is similar to the "gas eyes" found in workers exposed to hydrogen sulphide. This condition responds readily to treatment, I understand, but necessitates the employee being away from work for two or three days.

M.D., Wis.

ANSWER.—The first of the clinical pictures presented in the query is quite typical of mild carbon disulphide intoxication but not of hydrogen sulphide as implied. The bizarre mental conditions are not factitious but are at least likely to be genuine. A lengthy literature records a wide variety of manifestations of carbon disulphide poisoning almost as protean as are the results of lead poisoning or syphilis. However, throughout almost all, the dominant feature centers about mental and nervous disorders. In the minor case there may occur nothing more than headache, vertigo, excessive fatigability and transient excitement. In the well established case there may exist definite psychoses with intermittent mania and depression, various neuritides, blindness and marked loss in weight, along with a great variety of other possible features.

As little as one part of carbon disulphide in a million parts of air has been credited with causing minor disturbances. When the concentration reaches only slightly higher levels, clear-cut intoxication is believed to be possible. This places carbon disulphide in the category of highly dangerous industrial poisons. Obviously, prevention demands the continuous barring of these poisonous vapors from the atmosphere breathed by workers. In the particular industry mentioned in the query, which is only one of several in which this substance may be used, the chief opportunities for exposure are:

1. The escape of vapors from the vats wherein the cellulose xanthate is produced.
2. Exposure to vapors connected with the cleaning out of vats, which process must take place at intervals.
3. Leaks from pipes, which leaks readily come about, since carbon disulphide possesses the property of dissolving the greater number of joint sealing materials in common use.
4. Exposure provided at the time of dumping the contents of vats into sewers or partly open systems.

Protection against these various exposures may to some extent be procured through the following steps:

1. Spot suction appliances installed at every point wherever vapors may be introduced into the general atmosphere. The ultimate discharge of such exhaust systems should be such that no carbon disulphide may reenter the workroom.
2. In cleaning out vats, workers necessarily exposed should be equipped with positive pressure helmets of such construction

as not to be affected by carbon disulphide. Cork thus may be preferable to rubber.

3. Vat material should be discharged only into completely enclosed systems, which, in turn, discharge this dangerous material at points sufficiently remote so that no injury is to be anticipated. The final test of satisfactory conditions is the actual analysis of workroom atmospheres for the purpose of determining the content of carbon disulphide. No precise standard may be cited as constituting the threshold of danger, but the stand is taken that only a few parts of carbon disulphide, such as 3 or 4, per million of air, have been condemned as dangerous.

The second portion of the query, referring to a dermatitis among workers handling wet cellulose caps, correctly associates this industrial skin disorder with formaldehyde as the cause. Similar outbreaks are known to have arisen in various plants carrying out similar operations. The true chemical dermatitis has in some instances been aggravated and prolonged by the secondary invasion by mycotic organisms. The prevention of this condition is most difficult. The content of formaldehyde should be reduced as far below 1 per cent as is consistent with technical requirements. Certain portions of the work may be carried out under glass frames, closed on three sides and equipped with exhaust systems. This may prevent the escape of irritating gases such as might affect the eyes but manifestly will not greatly protect the hands of workers directly in contact with the wet solution. Some workers are far more sensitive than others, which fact, for their own good, should lead to their exclusion from this employment. Brunette types ordinarily are less susceptible. Much would be gained if formaldehyde might be eliminated through the substitution of some less irritating substance meeting the technical requirements for which the formaldehyde is employed.

METAPHEN IN PEPTIC ULCER

To the Editor:—What is the latest teaching concerning the treatment of peptic ulcer with 1:2,500 metaphen solution? When is it best administered?

M. L. SLATE, M.D., High Point, N. C.

ANSWER.—C. M. Trippe published in the *Annals of Internal Medicine* in January 1933 a report on the oral administration of metaphen in the treatment of eighty-two cases of peptic ulcer. He administered from 3 to 4 cc. of 1:500 solution three times daily before meals for gastric ulcers, and after meals for duodenal ulcers. The patients all suffered from psychoneuroses in addition to their organic trouble and the author reports relief of the mental symptoms as a result of the direct attack on the gastro-intestinal lesion. He also states that no toxicity was demonstrated even after the use of as much as 16 cc. of 1:500 solution daily for months. Large traces of mercury were found in the stools and none in the urine or blood. There is no definite proof at present that metaphen has any unusual advantages in the treatment of peptic ulcer, and more thorough trial must be made before any recommendation can be given for its therapeutic value. This article asserts that twenty-seven cases show roentgenologic evidence of ulcers and disappearance after the use of metaphen. If this statement is true, one should seriously question the efficacy of any treatment, because it is well known that roentgenologic evidence of duodenal ulcer is not materially altered by treatment of any kind except for relief of associated spasm.

INDUSTRIAL HAZARDS IN THE MANUFACTURE OF EXPLOSIVES

To the Editor:—Will you kindly send me a report of industrial results of handling explosives, such as trinitrotoluene, as required in government work at the Savanna ordnance depot (Illinois)?

GEORGE H. COTTRAL, M.D., Savanna, Ill.

ANSWER.—The extent of information implied in this query exceeds the space limitations of Queries and Minor Notes. If the reference to "industrial results" contemplates only the possible ill effects on the health and well being of exposed persons, still it is to be recognized that a varied lot of little related problems arise. These embrace, among others, the nature and toxicity of gases produced after detonation, the results of concussion on the auditory organs and other tissues, the nature and extent of accident hazards, the action on the body of the products of the slow decomposition of explosives and the effects of various chemicals used in the reclaiming of damaged lots of explosives. If, in fact, any explosives are manufactured, the most important consideration of all is to be directed to the intermediates employed, such as toluene.

Information of this character in extended form appears in many federal publications. A communication directed to the Commanding Officer of Edgewood Arsenal, Edgewood, Maryland, setting forth requests for specific information will lead to the citation of pertinent publications that are available through the Superintendent of Public Documents, Washington, D. C. In any urban library there is likely to be available listings year by year of scores of governmental publications bearing on the topics covered by this query.

TRYPARSAMIDE IN SYPHILIS OF THE OPTIC NERVE

To the Editor:—I am fully aware of the fact that tryparsamide is said to be contraindicated in optic atrophy. However, in view of the fact that syphilis of the optic nerve is a progressive disease which eventually terminates in blindness, would it be justifiable to use this drug in a case presenting failing vision of the left eye for the past three years, with the restlessness, irritability, forgetfulness and impaired judgment of the patient with dementia paralytica and the physical signs of external strabismus of the left eye, weakness of the left internal rectus, vision decreased in the left eye until only light is perceived, and visual acuity zero in the left eye? The visual acuity of the right eye is 20/20. The pupils are fixed to light. The fundi show primary optic atrophy, more advanced in the left eye, and other neurologic signs and the spinal fluid are indicative of dementia paralytica. The patient has been placed on malaria therapy with no improvement in vision. In the past he has had intensive courses of arsphenamine, bismuth compounds and intraspinal therapy (the exact nature of the latter is unknown), with continued progression of the disease process in the left eye. Swift-Ellis treatment is not available. 1. In view of the fact that Woods and Moore have shown improvement with tryparsamide in cases of optic atrophy, provided weekly examinations of the visual fields, visual acuity and fundi are taken and the preliminary subjective complaints of sensitivity to the drug watched for would it not be wise to use tryparsamide in this case?

2. What is the present status of the Swift-Ellis treatment in the treatment of neurosyphilis, especially optic atrophy? 3. Have any benefits been observed from the use of fever therapy in arresting optic atrophy? 4. Is there any other treatment that you could suggest to arrest advancing impairment of vision and perhaps restore sight? 5. How would you differentiate clinically between spasticity or rigidity of extrapyramidal origin and pyramidal tract disease? What are the characteristic signs and symptoms of each? It is the belief of most investigators that the benefit in dementia paralytica is due to the fever induced by malaria. However, several cases have been reported in which remissions have occurred with malarial therapy and without any appreciable rise in temperature, the parasites, however, being found in the blood stream. I would appreciate any references on the subject.

W. W. Pike, Binghamton, N. Y.

ANSWER.—1. Under the conditions, it would not be unwise to use tryparsamide.

2. There is no known treatment which can cure optic syphilitic atrophy.

3. No.

4. No.

5. In pyramidal tract disease the Babinski reflex should be present. Extrapyramidal rigidity is characterized mainly by tremor and rigidity.

The benefits derived from malarial therapy are thought to be mainly due to the rise of the temperature and its persistence.

CRAMPS IN LEGS

To the Editor:—A man, aged 43, who had sciatica in youth but not severely after the age of 18, went on a mountain climb four years ago, which was an unusual experience. After traveling about five hours he suffered very severe cramps in both legs, which subsided after half an hour's rest. He succeeded in completing the trip, a mile and a half more, by resting every few rods. Since that time he has had pain, with weakness and occasional stiffness in the muscles of both legs extending from the middle third of the thighs to the middle third of the legs, which seems most painful anteriorly in the thighs and posteriorly in the legs. It is accompanied at times by considerable weakness and fatigue in the knee joints. The condition is persistently better in the mornings and worse in the latter part of the day, although a period of forced rest of two weeks in bed did not result in improvement. The patient's arteries seem normal for his age, his blood pressure is inclined to be low, and all other systems seem normal. Tobacco and alcohol have never been used and the blood Wassermann reaction is negative. Treatment has consisted of salicylates, which seem to help temporarily, and hydrotherapy, which has helped little if at all. The patient has felt that he is better after dancing but worse after exercise that involves stooping, lifting or pushing. Is this intermittent claudication or myostitis, and what curative treatment, preferably local treatment, can be relied on? Please omit name.

M.D., Washington.

ANSWER.—The pains of intermittent claudication, which are characteristically induced by uninterrupted walking, disappear promptly on cessation of this activity. They do not occur while the patient is at rest or as a result of prolonged periods of standing or of interrupted walking short distances, as exemplified by the activity of a clerk in a store. It is highly improbable that the symptoms described are those of intermittent claudica-

tion, although the correspondent fails to state the relationship of the distress to walking. If pulsations in the dorsalis pedis, posterior tibial and popliteal arteries are normal, the distress is certainly not that of intermittent claudication.

The symptoms mentioned may be evidence of a general exhaustion state such as neurasthenia or chronic nervous exhaustion. The patient may have peripheral neuritis due to lead, arsenic or diabetes or he may have an inflammatory lesion or compression of the lumbosacral plexus. Arthritis of the spine might be responsible. If examination fails to disclose evidence of the conditions mentioned, it is a fair assumption that the distress originates in the muscles. The teeth, tonsils and prostate gland should be examined for evidence of infection, which should be eradicated if present. A vaccine made from organisms present in these areas may be of value. The local application of heat by an electric pad, the ordinary baker in which the source of heat is carbon filament electric light bulbs, or any of the various electrical devices for this purpose may be of distinct value. Massage is indicated, and rubs with warm methyl salicylate may give symptomatic relief. If the distress is mild, the regular administration of anodynes such as acetphenetidin or acetylsalicylic acid may increase the comfort of the patient. The intravenous injection of typhoid vaccine in amounts of from 10,000,000 to 25,000,000 killed organisms may be beneficial in a nonspecific manner.

TREATMENT OF BURNS

To the Editor:—I would appreciate your advising me regarding the method of treating burns with horse serum, the merits of substituting cow serum for horse serum in such treatment, and the method of producing a sterile cow serum, provided a cow serum can be beneficially used.

CARL A. LINDBLAD, Providence, R. I.

ANSWER.—The use of horse serum in the treatment of granulating wounds following burns was first advocated by E. P. Robinson in 1917. The technic consists of spraying the margins of the wound with normal horse serum and then covering the treated areas with rubber tissue. This procedure is repeated several times daily. After ten days, epithelization should be well advanced and treatment may be discontinued. Robinson states that tricresol, which is used as a preservative, may be safely omitted from the serum if tubes containing only enough serum for a single application are used. Omission of the tricresol prevents painful smarting during the spraying process and, he believes, possibly accelerates cell proliferation.

Horse serum is advocated on the theory that it provides nutrition to growing epithelial cells. If this theory is correct, there is no reason why cow serum cannot be used.

Serum should be collected under strictly aseptic conditions and may be preserved by the addition of 0.3 per cent tricresol. Before this method of treatment is tried it would seem logical to determine by means of skin tests whether or not the patient is sensitive to the serum that it is proposed to use.

TREATMENT OF ELECTRICAL SHOCK

To the Editor:—Aside from artificial respiration and the application of external heat for apparently lifeless victims of electrical shock, what other treatment is indicated and contraindicated? In a recent discussion of this subject the manager of the local light and power company stated that the latest information sent by the safety council advised against the use of any hypodermic stimulants in these cases, on the ground that such stimulants might have a "paralyzing" effect on the heart and respiratory centers. It has always been my opinion that caffeine, epinephrine and other cardiorespiratory stimulants were indicated in cases of this type. What drugs are indicated and contraindicated in cases of asphyxiation from ammonia? Can you give me any references on these two subjects? Does the U. S. Bureau of Public Health publish any information on these subjects? Please omit name.

M.D., Missouri.

ANSWER.—In a forthcoming article in THE JOURNAL on resuscitation, sponsored by the Council on Physical Therapy, all subcutaneous, intravenous or intracardiac medication is expressly disapproved. It is recommended that measures of resuscitation be confined to artificial respiration, inhalation of carbon dioxide (7 per cent) and oxygen, external heat cautiously applied and absolute rest. Respiratory stimulants are generally cardiac depressants, and cardiac stimulants are not really beneficial. Immediate reactions may be induced simulating recovery, but the patient is the worse for them next day.

After exposure to an irritant gas, absolute rest is the measure of prime importance, supplemented by inhalation of oxygen, without carbon dioxide, if the patient is cyanotic. After exposure to ammonia, edema of the glottis may necessitate intubation or tracheotomy.

EFFECTS OF PERMANENT WAVING ON HAIR

To the Editor:—Will you kindly let me know whether so-called permanent waving of the hair or repeated setting of the hair is considered harmful to the hair or scalp? Kindly omit name.

M.D., New York.

ANSWER.—Permanent waving is accomplished by the application of a solution of ammonia, which softens the hair. Heat is then applied to fix the hair in the position desired. This process necessarily dries the hair and tends to make it brittle, the amount of such damage depending on the skill of the operator.

Setting the hair by the use of a mucilaginous preparation is a much simpler process, which causes no such drying.

If these procedures interfere with the daily vigorous brushing of the hair, which is the best form of scalp massage, they may to that extent be harmful. If the patient's scalp should become sensitized to the ammonia solution or to one or more of the ingredients of the "setting" preparation, great damage may be done; but this cannot be held as an objection to the cosmetic process, for it can occur from any contact of a foreign substance with the skin.

TUBERCULIN TEST

To the Editor:—Will you kindly describe the preparation of tuberculin for intracutaneous testing from old tuberculin? Please omit name.

M.D., Ontario.

ANSWER.—Old tuberculin may be secured in concentrated form from drug houses. Before it is used in the intracutaneous test it must be diluted. One part of tuberculin to 9,999 parts of physiologic solution of sodium chloride is the dilution in most common use for the first test. Of this dilution, 0.1 cc. contains 0.01 mg. of old tuberculin. Many workers prefer to use 1 part of tuberculin to 999 parts of physiologic solution of sodium chloride as the initial dose, 0.1 cc. of which contains 0.1 mg. of tuberculin. When the test is negative, whether one uses 0.01 or 0.1 mg. of old tuberculin, a second test is usually performed with 0.1 cc. of a dilution of one part of tuberculin to ninety-nine parts of salt solution. This contains a full milligram of tuberculin. If there is no reaction to the test in forty-eight hours, one is reasonably safe in concluding that tuberculosis does not exist. However, the test is not infallible. Therefore, when there are other reasons to suspect tuberculosis, such as demonstrable evidence of extensive pathologic changes or severe toxemia, one should gradually increase the amount of tuberculin until the final dose contains 5 or 10 mg.

Unfortunately, tuberculin in such weak dilutions deteriorates rather fast. Therefore a fresh preparation should be made every two weeks. To this it is well to add 0.25 per cent of phenol. Tuberculin is inexpensive, and many physicians find it convenient to have a standing order with their pharmacists to prepare and deliver to them as many cubic centimeters as are needed every two weeks. In some cities and even some states, tuberculin in the proper dilution is provided free to physicians by the health departments.

The new tuberculin, which the Research Committee of the National Tuberculosis Association plans to have ready for distribution before long, promises to be more specific than the old tuberculin now in common use and to be in such form that it may be easily and quickly diluted in the physician's office.

CONVULSIONS AND BRAIN LESION

To the Editor:—I have under my care a man, aged 30, single. As far as I can ascertain his personal and family history are negative. I first attended him in June 1933, my diagnosis being grand mal. He had never had any previous attacks. The attacks occurred on the average of one a month until recently, when they have been coming at weekly intervals, usually after breakfast. He was referred to a reputable clinic in Portland, Ore., where a roentgenogram of the skull, blood and spinal Wassermann tests and metabolic tests were made. All reports were normal. The patient's tonsils and infected teeth have been removed. The blood pressure has persistently remained from 112 to 115 systolic. He is now on a ketogenic diet and phenobarbital compound as medication. Would you kindly advise me as to what else I can do to give relief? Please omit name.

M.D., Oregon.

ANSWER.—In the case of any patient over 20 years of age and in this case particularly at the age of 30 years it is hardly possible that the convulsions are due to idiopathic or essential epilepsy, if the history as given is accurate and reliable. It is much more likely that the grand mal seizures are caused by a brain lesion. This may be a tumor, a cyst or a localized encephalitis due to a number of possible causes, including syphilis. There is a possibility also that the seizures may be due to a low blood sugar, and it would be advisable to obtain blood examinations before breakfast on several occasions and,

if possible, a blood sugar examination on a specimen obtained at the time of the seizure. Examination of the fundi should be made by a competent ophthalmologist. The ordinary roentgenogram of the skull would not show a great deal unless there was intracranial pressure; an encephalogram would be much more valuable. The patient should be examined at regular intervals for signs of a developing intracranial lesion. In the meantime the ketogenic diet may be reduced to as low as 15 Gm. of carbohydrate and 0.75 Gm. of protein per kilogram of body weight, with the remaining calories in fat to make a total of 2,000 calories. The fluid should be limited to 1,000 cc. a day. Unless one is sure of the allowance of vitamins and calcium, it is advisable to give a yeast concentrate tablet three times a day and calcium phosphate from 1 to 2 Gm. a day. The phenobarbital is just as effective when given as such in doses of 0.1 Gm. as often as necessary to control the seizures unless, of course, undesirable reactions appear. The patient should be relieved of any source of irritation or worry and should be kept in a hopeful frame of mind.

SKIMMED MILK AND BANANA DIET

To the Editor:—Concerning the article by George A. Harrop on a milk and banana diet for the treatment of obesity (THE JOURNAL, June 16), I have one further question: Shall the patient continue with 1,000 cc. of milk and some bananas during the less restricted periods (in the alternating type of treatment)? Please omit name.

M.D., New York.

ANSWER.—The patient is expected to continue with 1,000 cc. of milk, and bananas, during the period of less restricted diet except for the substitution of one or two eggs for one or two bananas as the case may be. It is not desirable for further weight to be lost during this period, which should be essentially one of adjustment to the earlier loss, during the restricted period. During the less restricted period it is possible to substitute equal portions of other fruits, but most patients do not tire of the banana regimen once they have become accustomed to it. Frequently whole milk is substituted for the skimmed milk during the less restricted periods.

LITERATURE ON CASE WORK IN PSYCHOANALYSIS

To the Editor:—Will you kindly supply me with information as to the place of publication of two articles mentioned in your timely editorial entitled "An Evaluation of Psychoanalysis." which appeared in the Nov. 18, 1933, issue of THE JOURNAL? The articles referred to are (1) a report on 721 cases, published by the Berlin Psychoanalytic Institute, and (2) a report published four years ago by the commission of the British Medical Association.

GEORGE H. KIRBY, M.D., New York.

ANSWER.—1. The report on 721 cases, published by the Berlin Psychoanalytic Institute, can be found in "Zehn Jahre Berliner Psychoanalytisches Institut" (Ten Years of the Berlin Psychoanalytic Institute) published in 1930 by the Internationaler Psychoanalytischer Verlag, Vienna.

2. The report published four years ago by the commission of the British Medical Association can be found in the "Report of Psycho-Analysis Committee (supplement to the *British Medical Journal* of June 29, 1929), published by the Medical Department, British Medical Association House, Tavistock Square, London, W. C. 1.

INCUBATION PERIOD OF RABIES IN DOGS

To the Editor:—In your reply to "M.D., North Carolina" (THE JOURNAL, July 21, p. 208), it would probably have been more to the point to state that in this country the average period of incubation of rabies in the dog is about fourteen or fifteen days. This statement applies to clinical cases, and in such instances there seems to be but little difference in the period of incubation regarding the location of the bite. In a wound of the upper lip the period of incubation may be somewhat less than two weeks.

European writers are occasionally quoted by medical and veterinary writers in this country to the effect that the period of incubation is sometimes from several months to one or two years. It is quite possible that in such instances observations were inaccurate, and those making such statements have failed to exclude the possibility of rodent vectors.

J. V. LACROIX, D.V.S., Evanston, Ill.

PARACENTESIS VERSUS SPONTANEOUS PERFORATION IN OTITIS MEDIA

To the Editor:—To your answer to the query on this subject (THE JOURNAL, March 10, 1934, p. 790) stating that you are not aware of any statistics showing the advantage of early myringotomy, it might interest you that Körner, in the first edition of his Lehrbuch der Ohrenheilkunde, has two series of cases tabulated on page 107, which distinctly shows the advantage of early puncture. This tabulated list of cases is omitted from the last edition, presumedly to save space. The statement that early puncture leads to an earlier cure, however, remains.

J. M. WEST, M.D., Allentown, Pa.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 4. Sec., Dr. W. W. Council, Juneau.

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOGY: *Written (Group B candidates).* The examination will be held in various centers throughout the country, Oct. 1. *Oral (Group A and Group B candidates),* San Antonio, Texas, Nov. 13-16. Sec., Dr. C. Guy Lane, 416 Marlborough St., Boston.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written (Group B candidates).* The examination will be held in various cities of the United States and Canada, Nov. 3. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Sept. 8. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, Sept. 8 and San Antonio, Texas, Nov. 16. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations in Parts I and II will be held at centers in the United States where there are five or more candidates, Sept. 12-14. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEVADA: *Reciprocity.* Carson City, Aug. 6. Sec., Dr. Edward E. Hamer, Carson City.

NEW HAMPSHIRE: Concord, Sept. 13-14. Sec., Board of Registration in Medicine, Dr. Charles Duncan, State House, Concord.

NEW YORK: Albany, Buffalo, Syracuse and New York, Sept. 24-27. Chief, Professional Examinations Bureau, Mr. Herbert J. Hamilton, Room 315 Education Bldg., Albany.

OKLAHOMA: Oklahoma City, Sept. 11-12. Sec., Dr. J. M. Byrum, Mammoth Building, Shawnee.

PUERTO RICO: San Juan, Sept. 4. Sec., Dr. O. Costa Mandry, Box 536, San Juan.

WISCONSIN: *Medical. Reciprocity.* Green Bay, Sept. 11. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse. *Basic Science.* Madison, Sept. 22. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

Colorado April Report

Dr. William Whitridge Williams, secretary, Colorado State Board of Medical Examiners, reports the written examination held in Denver, April 3, 1934. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Five candidates were examined, 4 of whom passed and 1 failed. Four physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
University of Colorado School of Medicine		(1932)	85.1
Northwestern University Medical School		(1934)	84
State University of Iowa College of Medicine		(1933)	84
University of Nebraska College of Medicine		(1933)	78.5

School	FAILED	Per Cent
Osteopath *		62.1

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Indiana University School of Medicine		(1933)	Indiana
University of Nebraska College of Medicine		(1914)	Nebraska
Cleveland Medical College		(1896)	Ohio
University of Tennessee College of Medicine		(1931)	Tennessee

* Examined in medicine and surgery.

Rhode Island April Examination

Dr. Lester A. Round, director, Public Health Commission, reports the written and practical examination held in Providence, April 5-6, 1934. The examination covered 7 subjects and included 70 questions. An average of 80 per cent was required to pass. Eight candidates were examined, 7 of whom passed and one failed. One physician was licensed by endorsement after an oral examination, April 12. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Yale University School of Medicine		(1914)	82
Boston University School of Medicine	(1932) 84,	(1933)	82
Tufts College Medical School	(1923) 88,	(1929)	89
Cornell University Medical College		(1932)	82.5
University of Montreal Faculty of Medicine		(1933)	85

School	FAILED	Year Grad.	Per Cent
University of Montreal Faculty of Medicine		(1932)	78

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Duke University School of Medicine		(1932)	N. B. M. Ex.

Book Notices

Bacterial Infection, With Special Reference to Dental Practice. By J. L. T. Appleton Jr., B.S., D.D.S., Professor of Microbiology and Bacteriopathology, the Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania. Second edition. Cloth. Price, $7. Pp. 654, with 126 illustrations. Philadelphia: Lea & Febiger, 1933.

This book is written for both the physician and the dentist. Its unique purpose is to present the subject of bacteriology, especially the problem of infection, in a language understandable to both. A knowledge of its contents will permit physicians and dentists to discuss a common problem with greater comprehension and will tend to obviate past mistakes and misunderstandings on the part of both professions.

The first portion of the subject matter deals briefly with the morphology, physiology and classification of bacteria. It likewise contains an enlightening chapter on the action and effect of chemicals on micro-organisms. An insight of this chapter will permit a more rational use of antibacterial agents in sterilization and the treatment of disease.

Much of the book is devoted to part II, in which the subject of infection is discussed. Emphasis is placed on the reaction of the host to the invading micro-organisms rather than on a study of the bacteria themselves. Here the author discusses the mechanisms by which bacteria produce disease and how the host reacts and defends itself by natural, humoral and cellular defenses. An interesting chapter on oral hygiene is included in which attention is called to the increasing recognition of the importance of a clean mouth in the practice of both surgery and medicine.

The practitioner of both medicine and dentistry will find part III exceptionally interesting and helpful. It deals with special infections of the oral cavity and contains a careful analysis of conceptions of dental caries, pulpal infections and periodontal infections. The author enters into a considerable discussion of the pulpless tooth and presents a rather pessimistic opinion of its status. Exception might be taken to the importance attached to the cultural method of determining the condition of the periapical tissue, because of the extreme difficulty of avoiding contamination and thus obtaining a false picture. A histologic study of the root end is much more authentic, even though it means a sacrifice of the tooth.

While the use of French, German and Latin phrases in the text may be annoying to some readers, it is a reminder that the professional language still has its root in these tongues.

The book contains a wealth of references to both medical and dental literature, including foreign textbooks and periodicals, and offers to the student and practitioner a surprisingly complete bibliography on subjects related to its title. As a textbook for dental students it may contain too much detail, perhaps obscuring some of the principles by the thoroughness with which the subject is covered; but as a reference book and guide to those with some understanding of this subject it is unsurpassed.

Leitfaden der einheimischen Wurmkrankheiten des Menschen. Von L. Szidat und R. Wigand. Paper. Price, 15.50 marks. Pp. 212, with 156 illustrations. Leipzig: Georg Thieme, 1934.

This monograph is somewhat unique in that it deals with all the helminthic parasites of man found in a limited region, middle Europe. A table lists 124 parasitic worms found in man, twenty-four of which are found in middle Europe. While six species occur in middle Europe and not in North America, and eleven species rarely occur in America and not in middle Europe, all the principal parasites occurring in America except Necator americanus are discussed, making the monograph extremely useful for American physicians and students of parasitology. The discussions are brief and to the point, containing the gist of recent investigations. For most species the discussions include morphologic descriptions of the parasite, distribution and frequency, life history, mode of infection, clinical and pathologic characteristics, prophylaxis and treatment. At the end of each discussion there is appended a brief set of references to the important literature. As might be expected from the title of the monograph, most of the literature is of European origin. It will interest some to know that the authors list thirteen different diagnostic methods for detecting infestation by worms. Local and proprietary names are frequently used for drugs, and one might have difficulty in finding them in this country. The illustrations are without doubt the best that have appeared in any like work and are for the most part reproductions of original photographs and photomicrographs, with some excellent drawings, the authors having done original work in many different fields of helminthology. It is a welcome relief to see new and original illustrations in a textbook in parasitology, especially when they are from actual photographs of the material. While the work is comprehensive enough for the purpose for which it is intended, it is interesting that reference to the killing of Trichina by freezing is omitted from the discussion of prophylaxis in trichiniasis. The monograph will serve as an adequate guide to helminthology throughout the entire temperate zone.

Bergey's Manual of Determinative Bacteriology: A Key for the Identification of Organisms of the Class Schizomycetes. By David H. Bergey. Assisted by a committee of the Society of American Bacteriologists: Robert S. Breed, Frank M. Huntoon, Bernard W. Hammer, E. G. D. Murray and Francis C. Harrison. With an index by Robert S. Breed, New York Agricultural Experiment Station. Fourth edition. Cloth. Price, $6. Pp. 664. Baltimore: Williams & Wilkins Company, 1934.

Whether bacteriologists agree or not with the classification and nomenclature of organisms as published in this manual, they accept the work as an effort in the right direction. This edition, which is larger than the third edition by nearly a hundred pages, contains about fifty new species. Recognition has been given to the genus Brucella and the genus Listerella, while the genus Pfeifferella has been combined with the genus Actinobacillus. Description of species has been amplified in three genera: Leuconostoc, Propionibacterium and Bacterioides. In all, there are 1,178 organisms described in the book, indexed both by new and by old names. The manual is recommended to all laboratories doing bacteriologic work.

Einheitliche Grundlage für die Diättherapie des Diabetes mellitus. Von Dr. I. Normand. Paper. Price, 4.50 marks. Pp. 77, with 6 illustrations. Leipzig & Vienna: Franz Deuticke, 1934.

Starting out with the idea that the diabetic diet has been largely empirical, based on no unitary foundation, extremely complicated and often contradictory, the author presents what he considers to be a single theoretical basis for various successful dietetic procedures of the past and its practical application today. His unitary principle is none other than fasting or the more or less complete exclusion of one or two of the three main nutrients carbohydrate, protein and fat, and administration of the remaining nutrient in abundance. Since fasting affects the diabetic state most favorably and since carbohydrate, protein and fat are all "diabetogenous," the first two directly and the latter, at least in an indirect fashion, as a successful go-between from hunger to a normal diet, the author resorts to a diet with only one or at times two of the nutrients, but which one or which two is a matter of indifference. He considers that the withdrawal of all food or of one or two nutrients rests the organism and thinks he has proved this by feeding experiments in which equicaloric food values were given with one or two foods instead of three. And not to overburden the organism too long with a onesided diet he adopts a cyclic system and first gives one nutrient in excess and then another, as he believes that in this way he is alternately resting and stimulating the pancreas and liver.

Although the author appreciates the value of fasting, he does not appear to have quite grasped the fundamental usefulness of Allen's work in that, when one even partially underfeeds a diabetic patient, tolerance for carbohydrate increases, or that of Dubois and Richardson, who demonstrated that it is not so much the food which one eats but that which one burns which counts. In other words, in the author's various procedures undernutrition would seem to be far more of a factor in the good results he obtained than the exclusion of one or even two of the chief nutrients. Furthermore, scant attention is paid to the total dextrose value of the various diets. Also one must take issue with the use of alcohol to supply calories on the ground that the effect of alcohol on diabetes is indifferent.

The age of the patients on whom the tests were performed helps to explain the favorable results. Thus, ten of the thirteen

patients were over 50 years of age, another was 48 years old and the remaining two were 17 and 15 years, respectively. With individuals of these ages almost any kind of a diet that involves undernutrition, no matter whether high carbohydrate and low fat or vice versa or even a mixed diet, would act well and the author evidently recognizes this because his diets usually contain from 20 to 25 calories per kilogram of body weight. In fact, the patients often lost weight on these diets; but as no nitrogen analyses are given it is impossible to say how lacking the patients were in nitrogen balance.

Notwithstanding these comments, the monograph is interesting and instructive because it shows that now in Europe what F. M. Allen taught in the United States line on line, precept on precept, half a generation ago is recognized and utilized. It explains why the bizarre milk, potato, oatmeal and fruit diets and even the low carbohydrate and low protein with relatively high fat diet of Naunyn, tempered with the restricted calories of Weintraud, the high fat but greatly restricted protein and carbohydrate of Newburg and Marsh here and Petrén in Sweden, all worked well after a fashion when applied along with undernutrition in diabetes of moderate severity.

Valuable references to the recent German literature are included in the bibliography.

The Essentials of Physical Diagnosis. By Robert W. Buck, M.D., Assistant Professor of Preventive Medicine and Instructor in Physical Diagnosis, Tufts College Medical School. Cloth. Price, $3. Pp. 259, with 21 illustrations. Philadelphia & London: W. B. Saunders Company, 1934.

As the author states in the preface, his purpose in compiling this book has been to introduce the student to the principles of noninstrumental physical examination and to compress this information into a manual that he may carry about with him for reference. This task has been accomplished in a satisfactory manner. Corresponding to the scope of the book, a correlation of individual observations and a description of clinical entities and functional tests have been omitted. The head, abdomen and extremities receive more consideration than in similar manuals on physical diagnosis. Numerous references to original American and foreign sources and a list of titles for supplementary reading are given for the benefit of those who wish more detailed information. An interesting and important chapter is devoted to the body as a whole; it discusses the psychic state, physical constitution, nutrition, posture and gait. Certain omissions have been noticed; e. g., a description of risus sardonicus characteristic for tetanus, the subdivision of dyspnea into inspiratory and expiratory types, boardlike rigidity of the abdominal wall in perforation of gastric or duodenal ulcers or acute pancreatitis, Rovsing's sign of appendicitis, the subdivision of gangrene into dry and wet types, the value of rectal examination in obstetric conditions, and dark urine in obstructed jaundice. The booklet is well adapted for students and compares favorably with other manuals on the same subject.

La malattia di Heine-Medin. Per il Dott. Luigi Cerza. Paper. Price, 30 lire. Pp. 168. Naples: Arti grafiche La Nuovissima, 1933.

This monograph on anterior poliomyelitis, published as a contribution from the Institute of Pediatrics of the Royal University of Naples, is a systematic treatise. The chapter on etiology is thorough. The author seems convinced that the ultramicroscopic virus isolated by Flexner and Noguchi is truly the specific agent of the disease. He is not inclined to give much importance to the theories advanced that the virus responsible for the poliomyelitis is the same one that is responsible for epidemic encephalitis. Experimental production of the disease in the monkey is well discussed. The epidemiology is treated extensively. The best chapters are those on pathogenesis and pathologic anatomy. The dissertation on the various clinical forms of the disease is excellent. The cases showing the ascending type of Landry and those involving the bulb and the other forms that take on the appearance of diffused myelitis are beautifully treated and without doubt lend a great deal to the understanding of the sequelae that these lesions cause in the patients who recover. One of the benefits of reading this monograph is the reawakening of one's knowledge of neural anatomy and neuropathology. The clinical symptomatology of all the various forms is lucidly described, particularly in the advanced form of the disease involving the bulb and in other forms involving the midbrain. The therapeutic review is complete and in accord with the most advanced knowledge of the day. The author is convinced of the value of convalescent serum therapy, particularly the serum of recent convalescents, and he recognizes the value of properly prepared antitoxin with the Flexner-Noguchi virus. He regards of doubtful value the serum produced by the streptococcus isolated by Rosenow. The chapter dealing with the physical therapy of the flaccid paralysis is excellent in every respect.

The Principles of Gynaecology: A Text-Book for Students and Practitioners. By William Blair-Bell, B.S., M.D., F.R.C.S., Commander of the Royal Order of the Star of Rumania. Fourth edition revised with the assistance of M. M. Datnow, M.D., B.Ch., F.R.C.S., Demonstrator in Obstetrics and Gynaecology, University of Liverpool, and Arthur C. H. Bell, M.B., B.S., F.R.C.S., Surgeon to Out-Patients, Chelsea Hospital for Women. Cloth. Price, $10. Pp. 848, with 507 illustrations. Baltimore: William Wood & Company, 1934.

This authoritative work maintains the general trend of excellence of the previous editions. The author states that no effort has been made to compete with the larger books on gynecology. He cast aside the popular method of compilation and presents in a coherent manner the subject scientifically yet simply, with an imprint of personality. The chapters on internal secretion and certain pathologic lesions, such as endometriomas and ovarian neoplasms, have been rewritten. Discussion of ethical and medicolegal questions and sociological problems, such as contraception, have received consideration. The author is concerned chiefly with the morbid anatomy and his book contains an immense wealth of pathologic material. The operative technic is not described in connection with the corresponding lesions but a special chapter is devoted to surgical procedures. This book has perhaps one fault: while relatively much space is devoted to the fundamental morbid processes, the diagnostic characteristics and therapy are sometimes handled in a stepmotherly manner. Few lines are devoted to the treatment of Trichomonas infestation; Wertheim's operation is inadequately described; among postoperative measures, intravenous infusions and the use of the indwelling nasal catheter are not mentioned; only the citrate method of blood transfusion is outlined. Discussion of new procedures such as severing nerves for relief of pain in cancer could not be found. The style is fluent. The photomicrographs and colored plates are excellent. The volume will undoubtedly occupy a prominent place in the recent deluge of textbooks on this subject.

Strophanthintherapie zugleich ein Beispiel quantitativer Digitalisanwendung nach pharmakologischen Grundsätzen. Von Professor Dr. A. Fraenkel. Unter Mitarbeit von Dr. R. Thauer. Paper. Price, 12.60 marks. Pp. 148, with 34 illustrations. Berlin: Julius Springer, 1933.

This concisely and critically written monograph serves a useful purpose, as it not only presents the author's rich personal experience but also summarizes the heretofore scattered data available in the literature on the pharmacologic and therapeutic properties of strophanthin. In most textbooks and monographs on the digitalis substances, strophanthin is, as a rule, treated casually. The author presents briefly the history, botany and chemistry of strophanthin and then proceeds to an analysis of the pharmacology of the drug. He not only describes the well known effect of strophanthin on the heart muscle, on the vagus system and on the conduction system, but in one section he emphasizes the fact that chemical substances, such as ions, and physical agents may considerably influence the effect of strophanthin. The fate of strophanthin in the animal organism, as well as the biologic assays used, is well presented. About two thirds of the monograph is devoted to the use of strophanthin in man. Often the effect of other digitalis substances is discussed by way of comparison. The history of the development of intravenous medication is interesting. The beneficial clinical effect of strophanthin in different diseases of the cardiovascular system is analyzed. The author claims that if the single dose administered intravenously is not above 0.5 mg. and if severe diuresis, particularly in older people, is avoided, the danger from serious accidents is practically eliminated. He suggests that some of the fatalities attributed in the literature to strophanthin were probably not due to this drug. Even if some of the American readers

do not agree with free advocacy of intravenous strophanthin therapy, it must be conceded that this work will help to stress the fact that the danger often attributed to the use of strophanthin is at times exaggerated. The extensive and well arranged bibliography makes the monograph also a useful reference book.

Stoffwechselprobleme: Vorträge aus dem Gebiete der Physio-Pathologie gehalten bei der Eröffnung der Sommeruniversität im Palacio de la Magdalena in Santander/Spanien. Von Professor S. J. Thannhauser, Dr. med. et phil., Direktor der medizinischen Klinik, Freiburg i. Br. Paper. Price, 4.80 marks. Pp. 101, with 2 illustrations. Berlin: Julius Springer, 1934.

This small monograph consists of a series of five lectures delivered by Professor Thannhauser in August 1933. Each lecture is a concise review of a particular metabolic problem from the physiologic, pathologic and clinical aspects. After a rapid historical survey, recent developments are admirably discussed and clinical implications suggested. The lack of a bibliography for the many references to specific pieces of work detracts somewhat from the value of the reviews. The subjects discussed are the formation and metabolism of plant and animal nuclear material, the chemistry of blood and biliary pigments, the site of biliary pigment formation, the genesis of icterus, and disturbances in lipoid metabolism. Although Thannhauser has spent many years in the study of these problems and may be regarded as an authority, he does not attempt to stress his personal opinions. These lectures should be of interest and value to the student of internal medicine.

Die Haut- und Geschlechtskrankheiten: Eine zusammenfassende Darstellung für die Praxis. Herausgegeben von Prof. Dr. Leopold Arzt und Prof. Dr. Karl Zieler. Doppel-Lieferung 11/12. Band III: Hautkrankheiten tierischer Ätiologie. Von Prof. Dr. Otto Grütz. Die Tuberkulosen der Haut. Von Priv.-Doz. Dr. Josef Hämel und Priv.-Doz. Dr. Karl Hoede. Benignes Miliarlupoid Boeck, Lupus pernio, Lichen nitidus, Granuloma annulare, Erythematodes. Von Prof. Dr. Alfred Stühmer. Lepra. Von Priv.-Doz. Dr. Willi Leipold. Sklerom, Malleus, Aktinomykose. Von Dr. Friedrich Fischl. Paper. Price, 18 marks. Pp. 449-738, with 175 illustrations. Berlin & Vienna: Urban & Schwarzenberg, 1934.

Die Haut- und Geschlechtskrankheiten: Eine zusammenfassende Darstellung für die Praxis. Herausgegeben von Prof. Dr. Leopold Arzt und Prof. Dr. Karl Zieler. Band III, Doppel-Lieferung 13/14: Krankheiten der Schweissdrüsen. Von Prof. Dr. Richard Volk. Krankheiten der Talgdrüsen. Von Prof. Dr. Richard Volk. Die Krankheiten der Haare. Von Prof. Dr. Robert Otto Stein. Die Erkrankungen der Nägel. Von Prof. Dr. Robert Otto Stein. Mundschleimhautaffektionen. Von Prof. Dr. Otto Kren. Akute Exantheme einschliesslich der Exantheme bei septischen Prozessen. Von Dr. Josef Zikowsky. Hautkrankheiten der Neugeborenen und Säuglinge. Von Priv.-Doz. Dr. Gustav Riehl, jun. Die generalisierten exfoliativen Erythrodermien. Von Prof. Dr. Alois M. Memmesheimer. Titel und Inhaltsverzeichnis zu Band III. Paper. Price, 16.30 marks. Pp. 739-1062, with 112 illustrations. Berlin & Vienna: Urban & Schwarzenberg, 1934.

These volumes contain a number of complete, almost monographic, contributions by various authorities in the dermatologic domain. The subject of skin diseases caused by animal parasites is taken up by Grütz in a well illustrated chapter of 100 pages. The clinical and therapeutic problems in tuberculosis of the skin are exceedingly well presented by Hämel and Hoede from material in Zieler's clinic in Würzburg. The illustrations in this chapter are excellent photographic reproductions and present the varied anatomic features of cutaneous tuberculosis in great detail. There is a sane discussion on the treatment of lupus in which there is an evaluation of all the more modern therapeutic procedures. Other contributions that deserve particular commendation are those of Volk on diseases of the sweat and sebaceous glands, Stein's chapter on diseases of the hair, and Kren's chapter on disorders of the oral mucous membranes.

Spinal Anesthesia: Technic and Clinical Application. By George Rudolph Vehrs, M.D. Cloth. Price, $5.50. Pp. 269, with 81 illustrations. St. Louis: C. V. Mosby Company, 1934.

Spinal anesthesia is discussed from the standpoint of its physiologic effects on the vital organs and on the body as a whole, with frequent reference to the distribution of nerves, the effect of the anesthetic on them, and the resulting phenomena. The author features his investigations and previous papers on this subject. The book is well illustrated. Little new material of importance is included. Those enthusiastic over spinal anesthesia will be interested in this book.

Nachbehandlung nach chirurgischen Eingriffen. Von Prof. Dr. Eduard Melchior, Primärzt der chirurgischen Abteilung des Städtischen Wenzel-Hancke-Krankenhauses Breslau. Second edition. Paper. Price, 17.60 marks. Pp. 376, with 28 illustrations. Leipzig: Johann Ambrosius Barth, 1934.

The author reports his experiences in postoperative treatment, taking up each condition in detail. The discussion is arranged systematically under respiratory diseases, heart collapse, shock, vomiting, ileus, diarrhea, genito-urinary disturbances, infections, thrombosis, embolism, postoperative psychosis and various other complications of postoperative recovery. A number of other conditions, as blood transfusion and the care of diabetic or other systemic diseases during recovery, are included. Complications are then taken up following surgery of the special regions of the body, including that of the head and neck, thorax, abdomen and extremities, and discussed from this point of view. Numerous suggestions are made for the prevention and treatment of most of the undesirable complications following operation. Other suggestions are made for the comfort of the patient. The thoroughness and the detail make the book highly valuable as a reference work in the postoperative care of surgical patients.

The Negro Professional Man and the Community with Special Emphasis on the Physician and the Lawyer. By Carter Godwin Woodson. Cloth. Price, $3.25. Pp. 365. Washington, D. C.: Association for the Study of Negro Life and History, Inc., 1934.

This volume is one of a series dealing with various phases of Negro life in America. Figures are presented showing the number and distribution of various professional and semiprofessional classes. These statistics are supplemented by the conclusions drawn by five investigators who traveled through the South and those Northern cities having a considerable Negro population. Questionnaires and interviews were reported from 1,051 physicians, 656 dentists, 625 nurses, 388 pharmacists and 503 lawyers. Although teachers and preachers greatly outnumber the professions here named, their status is so much more generally understood that the author concerns himself with them only to the extent of their relationship to others. An attempt is made to analyze the factors that determine the Negro's choice of a career, his selection of a location, and the value of his service to the community. On such a broad theme the conditions found are necessarily indefinite. There are figures a plenty, but the meaning of the figures is not revealed.

Narkose zu operativen Zwecken. Von Dr. Hans Killian Oberarzt Chirurgischen Universitäts Klinik, Freiburg i. Br. Paper. Price, 24 marks. Pp. 406, with 165 illustrations. Berlin: Julius Springer, 1934.

This book, as the author says in the foreword, was written to afford a work on modern general anesthesia giving the German ideas and point of view and is the result of many years of experimental and clinical work. The first chapter is an outline of the history of anesthesia. The action of the general anesthetics on the blood, the temperature, the urinary tract, the liver and metabolism, the brain, the skin and mucous membranes, the skeletal muscle, the intestinal tract and the uterus is discussed. In the chapter on the technic of general anesthesia the author mentions the preanesthesia examination of the patient. The signs of the depth of anesthesia and the complications of anesthesia are given in detail. In the chapter on statistics there is a discussion of the causes of death in the various stages of anesthesia and afterward, and there are tables showing lung complications after general and after local anesthesia by several different workers. Another table shows the average mortality of the different general anesthetic agents. There is a chapter dealing with the sensitivity of the patient and the indications for general anesthesia. The author states that the indications for anesthesia and those for operations have the closest relationship because the nature, dosage and duration of the former are directly dependent on the demands of the latter. The development of local anesthesia has taken more than half the work from the field of general anesthesia. The last chapter deals with special technical methods in the administration of general anesthetics, including nasal insufflation, intrapharyngeal, intratracheal, high and low pressure apparatus, carbon dioxide absorption, and portable machines. A discussion of the dangers of explosion (especially of ethylene and acetylene) closes the work. This book should be of considerable interest to anesthetists.

Medicolegal

Multiple Neuritis Attributed to Chronic Sulphuric Acid Poisoning.—The deceased had been for many years employed by the defendants in a bleachery, where cloth was being finished by passing it through a 2 per cent solution of sulphuric acid. To keep this solution at a uniform strength, the deceased tested it from nine to thirty-five times a day. Hydrometers were provided for that purpose but, during the whole period of his employment, employees customarily tested by tasting, and that practice was well known to the defendant. Following that practice, the deceased would dip his fingers into the solution and apply them to his tongue. He died from multiple neuritis. Attributing his disease and death to the practice, his administratrix sued his employers. Verdicts were rendered in their favor, and the plaintiff appealed to the Supreme Court of New Hampshire.

It has been known to the medical profession for many years, said the Supreme Court, that sulphuric acid is injurious if taken internally in small quantities over an extended period of time. The defendants were chargeable with knowledge of that fact. Being chargeable with that knowledge, the evidence warranted a finding that the defendants were negligent in permitting a dangerous method of testing the acid solution without warning to their employees of the danger. The furnishing of hydrometers would not protect the defendants' employees unless proper instructions as to their use were given and enforced, or unless appropriate warnings as to the danger of adopting alternative methods of testing acid solutions were given. The defendants contended that their overseer on several occasions directed or requested the deceased to use the hydrometer, in order "to turn out better work"; but even if this were so, the evidence would clearly justify a finding that the defendants had acquiesced in the habitual disregard of the overseer's instructions, so that they had become a dead letter.

Evidence was offered to show that the deceased had had two attacks of influenza, which would render him more susceptible to injury by the sulphuric acid, and the court instructed the jury that if the deceased would not have developed multiple neuritis, had he not previously had an infectious disease, the defendants were not liable. This instruction the Supreme Court held to be erroneous. The jury might have found that the fatal disease was caused by the combined effects of sulphuric acid poisoning and the grip or influenza infection. The defendants would not be relieved from the natural consequences of their wrong, merely because other factors contributed to bring about the injury.

A new trial was ordered.—*Musgrave v. Great Falls Mfg. Co. (N. H.), 169 A. 583.*

Malpractice: Admissibility of Evidence Concerning Medical Defense Activities of State Medical Society.—In this third trial of this malpractice action[1] the defendant-physician, a member of the state medical society, called an officer of the society to testify on his behalf as a medical expert. On cross-examination, the witness testified that he paid dues to the society and that part of the dues so paid was allocated to a fund used to defend malpractice actions against members of the society. On redirect examination, he testified that the society did not defend every member and that the medicolegal committee of the society decided which members should be defended. He was then asked to tell which members the society defended, but the court refused to permit him to answer, holding that the question was an attempt to substitute the judgment of the medicolegal committee for the judgment of the jury. Judgment was given in favor of the plaintiff-patient, and the defendant-physician appealed to the Supreme Court of Michigan. He apparently urged as error the refusal of the trial court to permit the witness to state which members of the society were given the benefit of the society's aid, when sued for alleged malpractice. The testimony elicited from the witness on cross-examination, said the Supreme Court, as to his payment of dues and the use of such dues, was competent as bearing on the interest and credibility of the witness. The trial court erred, however, in refusing to permit the witness to state his understanding of the society's practice in defending malpractice suits. The witness's understanding of the practice was relevant to the claim of his interest and should have been received. The record, however, said the court, does not demonstrate that the erroneous ruling was prejudicial to the defendant. The judgment in favor of the plaintiff was accordingly affirmed.—*De Haan v. Winter (Mich.), 251 N. W. 391.*

1. See 241 N. W. 923; 247 N. W. 151, J. A. M. A. **102:** 74 (Jan. 6) 1934.

Right of Optical Corporation to Provide Licensed Optometrists for Customers.—The Kindy Optical Company was incorporated to "carry on the business of optician and dealer in optical goods and allied lines." It employed licensed optometrists to serve customers in connection with sales of optical goods. Through quo warranto proceedings the state sought to oust it from employing such optometrists for the purpose named. The state claimed that the company's articles of association did not authorize the company to render such service and that the law prohibited a corporation from operating an optometric department. From an adverse judgment in the circuit court, Wayne County, the state appealed to the Supreme Court of Michigan. The employment of an optometrist in connection with the sale of optical goods by the defendant, said the Supreme Court, is a natural and proper extension of the service it is authorized to perform. The optometry practice act of Michigan[1] contemplates the maintenance of optical departments by corporations in connection with the sale of optical goods. Many decisions which have been cited construing different statutes are not applicable to the construction of the Michigan act. The judgment in favor of the defendant optical company was affirmed.—*Voorhees, Attorney General v. Kindy Optical Co. (Mich.), 251 N. W. 343.*

1. Mich. Comp. Laws, 1929, sec. 6787, subsec. d; Laws 1909, sec. 7, paragraph d. "Persons selling spectacles or eyeglasses on prescription from any duly qualified optometrist or physician" are exempted from the operations of the Michigan optometry practice act, and the act shall not "prevent a person or persons selling glasses as an article of merchandise and not trafficking or attempting to traffic upon assumed skill."

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Chicago, Sept. 9-14. Dr. William P. Wherry, 107 South 17th Street, Omaha, Executive Secretary.

American Association of Railway Surgeons, Chicago, August 20-22. Dr. Louis J. Mitchell, 21 East Van Buren Street, Chicago, Secretary.

American Congress of Physical Therapy, Philadelphia, Sept. 10-13. Dr. Nathan H. Polmer, 921 Canal Street, New Orleans, Secretary.

American Hospital Association, Philadelphia, Sept. 24-28. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Public Health Association, Pasadena, Calif., Sept. 3-6. Dr. Kendall Emerson, 50 West 50th Street, New York, Executive Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 19-22. Mr. Harvey T. Sethman, 537 Republic Bldg., Denver, Executive Secretary.

Idaho State Medical Association, Lewiston, Sept. 7-8. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Kentucky State Medical Association, Harlan, Oct. 1-4. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Battle Creek, Sept. 12-14. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

National Medical Association, Nashville, Tenn., August 13-18. Dr. C. A. Lanon, 431 Green Street, South Brownsville, Pennsylvania, General Secretary.

Nevada State Medical Association, Reno, Sept. 21-22. Dr. Horace J. Brown, 120 North Virginia Street, Reno, Secretary.

Northern Minnesota Medical Association, Brainerd, Sept. 10-11. Dr. Oscar O. Larsen, Detroit Lakes, Secretary.

Ohio State Medical Association, Columbus, Oct. 4-6. Mr. Don K. Martin, 1005 Hartman Theatre Building, Columbus, Secretary.

Oregon State Medical Society, Corvallis, Sept. 27-29. Dr. L. Howard Smith, Medical Arts Building, Portland, Secretary.

Pacific Northwest Orthopedic Association, Seattle, Sept. 1. Dr. J. C. Brugman, 1215 Fourth Avenue, Seattle, Secretary.

Pennsylvania, Medical Society of the State of, Wilkes-Barre, Oct. 1-4. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Southern Minnesota Medical Association, Mankato, Aug. 13. Dr. Harold C. Habein, 102 Second Avenue, S.W., Rochester, Secretary.

Washington State Medical Association, Spokane, Sept. 10-13. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Western Branch of American Public Health Association, Pasadena, Calif., Sept. 3-6. Dr. W. P. Shepard, 600 Stockton Street, San Francisco, Secretary.

Wisconsin, State Medical Society of, Green Bay, Sept. 12-14. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, New York

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Transformation of Adipose Tissue Following Experimental Tuberculosis. G. A. Baitsell and K. E. Mason, Nashville, Tenn.—p. 587.

Therapeutic Pneumoperitoneum: Review of One Hundred Cases. A. L. Banyai, Wauwatosa, Wis.—p. 603.

Scaleniotomy Director. J. W. Cutler, Philadelphia.—p. 628.

*Changes in Pulmonary Tuberculous Cavities Resulting from Induced Paralysis of the Diaphragm. P. Slavin, Glen Gardner, N. J.—p. 629.

Review of the Cream-Egg Culture Medium for Tubercle Bacilli. H. C. Sweany, M. Evanoff and A. Gross, Chicago.—p. 638.

Inhibitory Action of Sulphur on Growth of Tubercle Bacilli. G. B. Lawson, Roanoke, Va.—p. 650.

Quantitative Study of Tuberculin Reaction in Childhood Tuberculosis. J. A. Johnston, P. J. Howard and J. Maroney, Detroit.—p. 652.

*Desensitization of Tuberculous Guinea-Pigs by Means of Natural Tuberculin Prepared from Fractured Bacilli. J. Weinzirl and R. S. Weiser, Seattle.—p. 660.

*Tryptophan Test in Tuberculous Meningitis. M. B. Rosenblatt, New York.—p. 668.

*Significance of Repeated Red Cell Sedimentation Rate Determinations in Pulmonary Tuberculosis. L. E. Siltzbach, Bedford Hills, N. Y.—p. 673.

Erythrocyte Sedimentation Test, with Especial Reference to Tuberculosis. A. R. Masten, Wheat Ridge, Colo.—p. 690.

Changes in Tuberculous Cavities Resulting from Paralysis of Diaphragm.—Slavin observed that therapeutic paralysis of the diaphragm produces obliterative changes in pulmonary tuberculous cavities partly through compression but mainly through concentric retraction of the relaxed capsule of the cavity. Only those cavities, the walls of which are compressible and capable of fibrotic retraction are influenced by interruption of the phrenic nerve. Complete closure of responsive cavities depends on their size and on the condition of the opposite lung and is not controlled by the amount of elevation of the paralyzed diaphragm. Cavities situated in the lower lobe show more initial compression and obliterate more rapidly than cavities of the upper lobe. As an aid in the closure of pulmonary tuberculous cavities phrenic paralysis presents the least radical procedure, and its application in selected cases saves the patient the inconvenience of prolonged pneumothorax treatment, the risk of major surgical collapse operations and the uncertainty of protracted expectant therapy.

Desensitization of Guinea-Pigs by Means of Natural Tuberculin.—Weinzirl and Weiser state that tuberculous guinea-pigs can be desensitized by means of a natural tuberculin prepared from tubercle bacilli subjected to repeated freezings with liquid air. No desensitizing powers could be demonstrated from the cell débris remaining after the removal of the natural tuberculin. The natural tuberculin successfully desensitized guinea-pigs infected with either nonvirulent or virulent tubercle bacilli. Desensitization was effective against both Seibert's synthetic medium tuberculin and the homologous natural tuberculin.

Tryptophan Test in Tuberculous Meningitis.—Rosenblatt used the tryptophan test in twelve cases of tuberculous meningitis proved by necropsy or by demonstration of the tubercle bacillus in the spinal fluid. All these cases gave unquestionably positive reactions. The control group consisted of forty-five cases. The presence of a positive tryptophan test is strongly suggestive but not pathognomonic of tuberculous meningitis. Hemorrhagic, purulent and xanthochromic fluids give "false positive" reactions, which are usually distinguishable from those obtained in tuberculous meningitis by the purplish color. Indistinguishable positive reactions may be obtained with clear spinal fluids in which the protein is increased. There is sufficient evidence to warrant the use of the tryptophan test as a routine procedure in the examination of the spinal fluid.

Red Cell Sedimentation Rate in Tuberculosis.—Siltzbach studied the erythrocyte sedimentation reaction curves (Cutler) in 494 patients having pulmonary tuberculosis: 1,170 individual tests were performed. The data so obtained were analyzed, and correlative studies with the constitutional and local manifestations of the disease were made. It was found that curves reflecting moderate and severe activity occur with greater frequency in patients with fever, rapid pulse, loss of weight, positive sputum, the formation of cavities, extensive lesions and extrapulmonary tuberculosis. The erythrocyte sedimentation reaction curve reflects the progress of the disease and a change in the erythrocyte sedimentation reaction curve often precedes the change in clinical symptoms and signs. It is of value, therefore, in the prognosis of pulmonary tuberculosis. In collapse therapy the erythrocyte sedimentation reaction may be utilized as a gage of the effectiveness of the treatment.

Annals of Internal Medicine, Lancaster, Pa.

7: 1469-1608 (June) 1934

Treatment of Angina Pectoris and Congestive Heart Failure by Total Ablation of the Thyroid in Patients Without Thyrotoxicosis: X. Particular Reference to Preoperative and Postoperative Medical Management. H. L. Blumgart, D. D. Berlin, D. Davis, J. E. P. Riseman and A. A. Weinstein, Boston.—p. 1469.

Statistical Evaluation of Different Methods for Detection of Arteriosclerosis in Diabetes Mellitus. I. M. Rabinowitch, W. L. Ritchie and S. H. McKee, Montreal.—p. 1478.

Tularemic Pneumonia. P. G. Boman and A. J. Bianco, Duluth, Minn.—p. 1491.

Developments and Disappointments in Blood Studies. R. I. Lee, Boston.—p. 1496.

*Multiplane Chest Electrocardiography: Standardized Method of Chest Lead Applications. J. Weinstein, Brooklyn.—p. 1503.

*Malarial Therapy in Asymptomatic Neurosyphilis. P. A. O'Leary, Rochester, Minn.—p. 1513.

Congenital Cystic Disease of the Lungs: Case Reports. L. J. Moorman, Oklahoma City.—p. 1523.

Mild Hypothyroidism. R. M. Watkins, Cleveland.—p. 1534.

*Use of Calcium Ortho-Iodoxybenzoate in Treatment of Arthritis, with Discussion of Its Possible Value in Some Other Orthopedic Conditions. T. Wheeldon, Richmond, Va.—p. 1540.

Dr. Richard Shuckburgh and Yankee Doodle. L. H. Roddis, Washington, D. C.—p. 1548.

Multiplane Chest Electrocardiography.—Weinstein proposes a standardized method of chest lead application which surrounds and intersects the heart by planes of current take-off, and he presents the uniformity of the tracings obtained in a control group of fifty normal cases and the advantage of the multiplane chest leads in conjunction with the three standard limb leads in more accurately detecting and localizing myocardial lesions. The right and left arm electrodes are used for the chest application and they are so placed that the current take-off is kept in the same relationship to the current direction within the heart as in the three standard limb leads. The right arm electrode is therefore always applied to the chest in closest relation to the tail of the arrow, while the left arm electrode is applied in closest relation to the head of the arrow representing the heart action current direction. It is important to determine accurately the size of the heart and the position of the cardiac borders either by a teleroentgenogram, fluoroscopic methods or by as accurate percussion as is possible. Flexible electrodes, one-half inch wide and from 4 to 6 or more inches in length, depending on the size of the heart, are used. The electrodes should be covered with gauze soaked in warm sodium chloride solution. The skin at the sites selected is cleansed with an antiseptic solution, and linear scarifications, the length of the electrodes used, are made. The electrodes are held firmly in place either by an assistant whose hands are insulated with rubber gloves or, preferably, by a spring clamp device. The skin resistance should be carefully standardized before each lead is taken. The author presents illustrations of the positions of the electrodes on the wall of the chest.

Malaria Therapy in Asymptomatic Neurosyphilis.—In the past ten years, O'Leary treated with malaria eighty-nine patients who had asymptomatic neurosyphilis when the serologic tests on the spinal fluid had failed to become reversed to negative following intensive use of arsphenamine and mercury and bismuth compounds. In 50 per cent of the cases in which invasion of the nervous system was of mild degree the serologic reactions became completely negative following malarial therapy,

irrespective of whether or not antisyphilitic treatment was given after induction of malaria. In 39 per cent of cases in which the formula of the spinal fluid was of the paretic type, the spinal fluid factors were reversed to negative following malarial therapy. Among those cases in which the usual antisyphilitic treatment was not given following malarial treatment, there was satisfactory reversal to negative of the spinal fluids in 58 per cent of those in which reports on the spinal fluid had indicated only mild or moderate involvement, whereas among cases in which the formula of the spinal fluid was of paretic type, in only 30 per cent was there a reversal to negative. When it was observed that the results from malarial therapy alone were unsatisfactory at the end of the first year, arsphenamine and mercury or bismuth compounds again were given intensively. In other words, if favorable results from malarial treatment were lacking at the end of six or twelve months, intensive specific antisyphilitic measures were instituted in an effort to ward off the appearance of parenchymatous changes in the nervous system. The absence of serologic relapse was noteworthy. In only one case did the author find a relapse to positivity of the spinal fluid after a negative report had been obtained following malarial treatment. Death occurred in one case, the cause for which could not be found at necropsy. He believes that there is ample evidence to allow the assertion that asymptomatic neurosyphilis is the forerunner of dementia paralytica or tabes dorsalis. Also, it is an acknowledged fact that in many cases of asymptomatic neurosyphilis a satisfactory serologic response follows intensive application of the so-called specific remedies. Those patients who fail to derive serologic reversal from specific agents are entitled to the benefit of malarial therapy because, on a basis of comparative percentages, malarial therapy is more valuable in the prevention of parenchymatous neurosyphilis than it is in the treatment of it.

Calcium Ortho-Iodoxybenzoate in Treatment of Arthritis.—Wheeldon observed the effect of calcium ortho-iodoxybenzoate in a general group of 236 arthritic cases and presents a detailed study of forty-six cases of hypertrophic and atrophic arthritis. The therapeutic results were most satisfactory and unpleasant side reactions were almost nonexistent. Laboratory observations indicate an increase in indican output, improvement in hypertension and lowering of sedimentation rate. The author is of the opinion that calcium ortho-iodoxybenzoate achieves its beneficial results through its stimulating action on the peripheral circulation and that, subjectively at least, calcium ortho-iodoxybenzoate improves the circulation in the affected joints.

Annals of Otol., Rhinol. and Laryngology, St. Louis

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Electrical Activity of the Cochlea in Certain Pathologic Conditions. M. H. Lurie, H. Davis and A. J. Derbyshire, Boston.—p. 321.
Effect of Severe Illness on the Hearing. E. P. Fowler, New York.—p. 387.
Otosclerosis in Ultraviolet Light. E. P. Fowler Jr., New York.—p. 408.
Lateral Sinus Thrombosis: Review of Literature. G. M. Coates, M. S. Ersner and A. H. Persky, Philadelphia.—p. 419.
Postanginal Sepsis. I. A. Abt, Chicago.—p. 441.
Primary Carcinoma of External Auditory Canal. M. Fineberg and L. H. Jorstad, St. Louis.—p. 464.
Recognition of Potential Agranulocytic Angina in Otolaryngology. F. A. Burton, San Diego, Calif.—p. 472.
Prevention and Treatment of Deafness. G. E. Shambaugh Jr., Chicago.—p. 513.
Constitutional Deafness. M. J. Gottlieb, New York.—p. 541.
Head and Neck Manifestations in Metabolic Disorders. H. L. Pollock, Chicago.—p. 553.
Primary Bronchiogenic Carcinoma: Incidence, Pathogenesis and Diagnosis. H. C. Sweany, Chicago.—p. 561.
*Electrocautery in Treatment of Laryngeal Tuberculosis. W. E. Vandevere, El Paso, Texas.—p. 572.
Relation of Chest Infection to Sinus Disease. E. L. Spence, Plainview, Texas.—p. 579.
*New Treatment for Eustachian Tube Obstruction: Controlled Heat Bougie. E. Simon, Albany, N. Y.—p. 598.

Electrocautery in Treatment of Laryngeal Tuberculosis.—Vandevere states that laryngeal tuberculosis is a complication of pulmonary tuberculosis in practically every case. The tuberculous lesion is healed by the deposit of calcium salts in the necrotic areas and by the increase of fibrous tissue which develops from the fixed connective tissue cells, and probably by a changing of the epithelioid cells into fibroblasts. Such healing processes are encouraged by an increased blood supply. Rest is important in all cases of laryngeal tuberculosis. The electric cautery is used in all tuberculous ulcers and infiltrations that do not respond to rest. The electric cautery heals, not by the destruction of all tuberculous tissue, but by the development of an inflammatory zone in which newly formed blood vessels and fibroblasts are produced, which hastens healing by cicatrization. Most early cases heal with cautery treatment, while there is relief from pain in the advanced cases. Electric cauterization is carried out best under cocaine anesthesia and by the indirect method.

Treatment for Eustachian Tube Obstruction.—Simon uses heat bougies in treating eustachian tube obstruction. He varies the procedure at different times, but essentially it is the insertion of the bougie through a short (Yankauer) catheter and then turning on of the heat gradually at the rheostat dial until the galvanometer of the thermocouple reads 110 F. This temperature is maintained for a period of ten minutes, following which the heat is completely turned off but the bougie is still left in the tube. After ten minutes the bougie is withdrawn. The procedure was usually done weekly.

Archives of Ophthalmology, Chicago

11: 933-1098 (June) 1934

*Detachment of the Retina: Treatment with Multiple Diathermic Puncture and Its Results. K. Šafář, Vienna, Austria.—p. 933.
Apparent Optic Atrophy with Recovery of Normal Central Visual Acuity. F. H. Adler, Philadelphia.—p. 942.
Congenital Cyst in the Vitreous. S. G. Seech, Los Angeles.—p. 947.
Muscle Training in Functional Convergence Insufficiencies. L. F. Appleman, Philadelphia.—p. 950.
Racemose Arteriovenous Aneurysm of the Retina (Aneurysma Racemosum Arteriovenosum Retinae). W. H. Stokes, Omaha.—p. 956.
Chemistry of the Vitreous Humor: I. Chemical Composition of the Proteins. A. C. Krause, Baltimore.—p. 960.
Id.: II. Proteolysis. A. C. Krause, Baltimore.—p. 964.
Anatomic Error in Using Base of Nose as Point of Rest for Spectacles. T. J. Dimitry, New Orleans.—p. 969.
Free Cyst Floating in the Vitreous. C. B. Meding, New York.—p. 973.
The Wilmer Iridocapsulectomy. B. Rones, Baltimore.—p. 976.
Glioma of the Retina: Report of Case with Intracranial Extension. C. W. Rand, Los Angeles.—p. 982.
Phthiriasis Palpebrarum: Report of Case. R. Friedman and C. S. Wright, Philadelphia.—p. 995.
Anatomic and Clinical Manifestations of Necrosis in Eighty-Four Cases of Choroidal Sarcoma. B. Samuels, New York.—p. 998.
*Repair of Coloboma of the Upper Eyelid. L. A. Peer, Newark, N. J.—p. 1028.

Treatment of Detachment of the Retina.—With special short needle electrodes, Safář makes multiple perforating diathermic punctures in the area of the bulbar wall where the rent of the retina is situated or is supposed to be. After the subretinal liquid has escaped through these punctures, the retina attaches to the coagulated choroid and becomes adherent to it; the tear disappears, and the detachment of the retina heals. Since this method can be applied over a large area with slight intensity of current, it is applicable in cases of large tears or multiple holes as well as in those without visible tears. The location of the tears is considerably facilitated by scattering the punctures. The method is simple and efficacious, and the burden on the eye is minor, particularly if the condition is recent; patients presenting such a condition may be operated on with nearly absolute certainty of success. Complications are rare. In the author's cases reattachment of the retina has been permanent to the present time in 57.5 per cent of forty eyes operated on without selection in 1932 and in 85 per cent of the first forty eyes operated on in 1933. Failures occurred in cases of old detachment, with a shrunken or contracted retina due to an operative scar, and in old people who could not be kept in bed in the prone position for a sufficient length of time and who were inclined to bleed; however, hemorrhages into the vitreous are rarer with this method than with other methods. Retinas with older detachments, with the formation of striae and a boundary area, could still be reattached; sometimes there was a surprising improvement in visual function. Generally, however, early operation is indicated, for the longer the detachment persists, the less is the chance for reattachment and the regaining of useful function of the retina.

Repair of Coloboma of Upper Eyelid.—Peer reports a case in which coloboma followed the removal of a portion of the upper eyelid for basal cell carcinoma. The growth involved both the conjunctiva and the skin and was removed by excising a full thickness section of the lid extending from the free margin to a little above the upper border of the tarsus. A flap of skin from the eyelid was outlined above the defect, dissected from

the muscle layer and turned down trapdoor fashion, sufficient hinge or pedicle being left to insure an adequate supply of blood. This flap was sutured to the denuded edges of the defect with the surface of the skin next to the eye and the raw surface outside, and was left in place for one week. A free, full thickness skin graft was then taken from the opposite upper eyelid and sutured to cover the entire denuded area, only moderate pressure being applied to avoid strangulation of the skin flap. One week later the dressing was removed and artificial adhesions were made between the new portion of the upper and lower lids. The adhesions were left in place for four months and then severed. A notching of the margin of the lid due to imperfect union was repaired at this time by a procedure similar to the Blair-Mirault operation for harelip. The author has used this operation on other cleft lids and recommends it as a practical and satisfactory method.

Archives of Pathology, Chicago

17: 729-872 (June) 1934

Combined Syphilitic and Rheumatic Disease of the Aortic Valve: Report of Three Cases. R. V. Sager and A. R. Sohval, New York.—p. 729.
*Hodgkin's Disease: Search for Infective Agent and Attempts at Experimental Reproduction. P. E. Steiner, Chicago.—p. 749.
Proliferative Reaction of Guinea-Pig Skin to Sulphydryl and Its Relation to Neoplasia. S. P. Reimann and Ethel Rahe Hankele, Philadelphia.—p. 764.
*Metamorphosis of Metastrongylus Larvae and Mesenteric Lymph Glands. M. Hobmaier, San Francisco.—p. 769.
Analysis of Coroner's Statistics from Cook County (Chicago), Ill., with a Pathologic Review of the Causes of Death. H. R. Fishback, Chicago.—p. 775.

Attempts at Experimental Reproduction of Hodgkin's Disease.—Steiner investigated the diseased splenic and lymph node tissues from fifteen patients having Hodgkin's disease (lymphogranulomatosis) together with control diseased tissues from eight patients with other lymphomas (1) for the ability of the diseased tissue to produce tuberculosis in chickens, guinea-pigs, rabbits, dogs and mice, (2) for the disease-producing capacity of these tissues as grafts and (3) for the presence of tubercle bacilli or atypical acid-fast bacteria in these tissues, special cultural methods being used. The diseased tissues from the twenty-three patients were injected or transplanted into 199 animals. An additional group of twenty-three chickens that were not given injections served as a control of environmental factors, especially of the occurrence of spontaneous tuberculosis. A group of eight dogs received intracerebral injections. The animals were allowed to survive for periods varying from nine to thirteen months. In the entire group of animals given injections of diseased human tissues, tuberculosis occurred in one chicken and in one guinea-pig following injection of material from a patient having Hodgkin's disease, and in one guinea-pig following injections of lymphosarcomatous tissue. In the infected chicken a spontaneous infection was not ruled out. In passage experiments with tissues from these infected animals, tuberculosis was again produced. Numerous lesions in diseased chickens superficially suggesting tuberculosis were considered nontuberculous because they did not definitely satisfy any of the following criteria: the acquisition of a positive reaction to tuberculin, the gross and microscopic morphologic structure of tuberculous lesions, the presence of stainable acid-fast bacilli in suggestive lesions, the growth of acid-fast bacilli from such lesions on culture mediums, and the production of tuberculosis in animals in passage experiments. No evidence was found that the diseased human tissues were transplantable or that they were capable of inducing in animals lesions with a similar histologic structure. No strains of acid-fast bacteria were grown from these diseased human tissues by modern cultural methods. Likewise the occurrence of acid-fast forms of bacteria reported to exist as a transient phenomenon early in the cultures of these tissues was not confirmed. Avian tubercle bacilli detectable by the methods used were apparently not present in the tissues of the fifteen patients having Hodgkin's disease.

Metamorphosis of Metastrongylus Larvae and Mesenteric Lymph Glands.—The study of Hobmaier corroborates the previous statement of A. Hobmaier and the author that the infestive larvae of Metastrongylus must invade the mesenteric lymph nodes of the vertebrate host to grow there into sexual larvae and that they do not enter the tributaries of the portal vein as a part of their regular life cycle. The pathologic changes observed in the invaded lymph nodes may be explained as the result of the trauma inflicted by the embolization of the larvae into the lymphatics, by the dilatation and occlusion of these vessels during the development of sexual larvae, and by the disarrangement of anatomic structures caused by their emigration.

Florida Medical Association Journal, Jacksonville

20: 553-596 (June) 1934

Treatment of Upper Urinary Tract Infections. E. C. Shaw, Miami.—p. 561.
Hypothyroidism Without Myxedema. N. L. Spengler, Tampa.—p. 564.
Otitis Media. C. G. Coakley, New York.—p. 568.
Practical Present Day Concept of Anemias. V. M. Johnson, West Palm Beach.—p. 571.
Sane or Psychotic? W. C. McConnell, St. Petersburg.—p. 573.
Anomalies of the Kidneys and Ureters. G. F. Highsmith, Arcadia.—p. 575.
Active Immunization Against Diphtheria. W. T. Harrison, Washington, D. C.—p. 578.

Georgia Medical Association Journal, Atlanta

23: 203-244 (June) 1934

The Problems of Present-Day Medicine. C. H. Richardson, Macon.—p. 203.
Theory Explaining the Excitatory and Inhibitory Functions of the Nervous System, Especially Those of the Brain. J. N. Brawner, Atlanta.—p. 214.
Birth Injuries in the New-Born. B. Bashinski, Macon.—p. 225.

Indiana State Medical Assn. Journal, Indianapolis

27: 281-324 (July 1) 1934

Value of Perimetry in Ocular Diagnosis and Prognosis. E. W. Dyar, Indianapolis,—p. 281.
Transurethral Prostatic Resection. W. S. Ehrich, Evansville,—p. 285.
Economic Progress in Medicine. W. F. Kelly, Indianapolis.—p. 286.
Feeding the Normal Baby. C. S. Bosenbury, South Bend.—p. 291.
Acute Intestinal Obstruction. C. A. Nafe, Indianapolis.—p. 293.
Clinical Application of Roentgenology of the Gallbladder. C. A. Stayton, Indianapolis.—p. 298.

Journal of Comparative Neurology, Philadelphia

59: 341-508 (June 15) 1934

The Mechanism of Vision: VII. Projection of the Retina on the Primary Optic Centers in the Rat. K. S. Lashley, Chicago.—p. 341.
The Hypothalamus of Necturus. C. J. Herrick, Chicago.—p. 375.
Nuclear Configuration of Hypothalamus and Subthalamus of Macacus Rhesus. R. L. Crouch, Columbia, Mo.—p. 431.
Nuclear Configuration of Thalamus of Macacus Rhesus. R. L. Crouch, Columbia, Mo.—p. 451.
Correlation Between the Development of Local Reflexes and Reflex Arcs in the Spinal Cord of Cat Embryos. W. F. Windle, Chicago.—p. 487.

Journal of Experimental Medicine, New York

60: 1-126 (July 1) 1934

Production of Streptococcus Hemolyticus Bacteremia in Nonspecifically Sensitized Animals. C. G. Burn, Caroline A. Chandler and Mildred Hartshorn, New Haven, Conn.—p. 1.
Studies on Host Factors in Pneumococcus Infections: I. Certain Factors Involved in the Curative Action of Specific Antipneumococcus Serum in Type I Pneumococcus Dermal Infection in Rabbits. K. Goodner, New York.—p. 9.
Id.: II. Protective Action of Type I Antipneumococcus Serum in Rabbits. K. Goodner, New York.—p. 19.
Pathologic Histology of the Shwartzman Phenomenon with Interpretative Comments. H. T. Karsner and A. R. Moritz, Cleveland.—p. 37.
Infection of Ferrets with Swine Influenza Virus. R. E. Shope, Princeton, N. J.—p. 49.
*Flow and Composition of Lymph in Relation to the Formation of Edema. A. A. Weech, E. Goettsch and E. B. Reeves, New York.—p. 63.
Chemo-Immunologic Studies on Conjugated Carbohydrate-Proteins: VIII. Influence of Acetyl Group on Specificity of Hexoside Protein Antigens. W. F. Goebel, F. H. Babers and O. T. Avery, New York.—p. 85.
Respiration Mechanism of Pneumococcus: III. M. G. Sevag and L. Maiweg, Berlin, Germany.—p. 95.
Studies on the Etiology of Spontaneous Conjunctival Folliculosis of Rabbits: I. Transmission and Filtration Experiments. P. K. Olitsky, J. T. Syverton and J. R. Tyler, New York.—p. 107.
Antigenic Relationship Between Proteus X-19 and Typhus Rickettsia: II. Study of the Common Antigenic Factor. M. R. Castaneda, Boston.—p. 119.

Composition of Lymph in Formation of Edema.—The experiments of Weech and his associates indicate that lymph flow in normal dogs ceases entirely during periods of complete physical inactivity. During these periods, capillary filtrate accumulates in the interstitial spaces and can enter the lymph channels at once when activity stimulates the pumping action of the lymphatic valves. The initial flow is therefore rapid, but the rate declines quickly as the interstitial reservoir is emptied and finally becomes constant at a rate which corresponds to that at which new lymph is being produced. With

the edematous dog the situation is similar, but because the interstitial spaces contain more fluid (edema) the initial rapid flow can be maintained for a longer time than in the normal animal. Within ten or fifteen minutes, however, the rate of flow decreases and continued activity is accompanied by progressive and finally by complete loss of edema. The carrying capacity of the lymph vessels at all times greatly exceeds the rate at which new lymph can be formed. The data suggest that the rate of lymph formation, as estimated from the minimal rates of lymph flow, may increase slightly when edema is present. The increase, however, is surprisingly small and not beyond the limits of variations encountered in normal animals. Lymph from the normal dog always contains an appreciable quantity of protein. Lymph from the edematous dog contains much less protein. The lymph protein deficit of edematous dogs is greater than can be accounted for on the basis of a proportionate loss corresponding to the serum protein deficit. The concentration of protein in lymph from edematous dogs is of the same order of magnitude as that of edema fluids, although the two fluids are not identical in composition. Minor fluctuations in the protein of lymph occur while the collections are being made. The fluctuations may depend on varying proportionate rates of flow from different regions that send tributaries to the main lymph channels or they may result from variations in capillary permeability incident to the continuous exercise necessary for maintaining lymph flow. Lymph from the lower leg of normal and edematous dogs sometimes contains red blood cells and sometimes it does not. Both increases and decreases in the number of erythrocytes may follow in succession as the conditions of collection are altered.

Journal of Lab. and Clinical Medicine, St. Louis

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Intracellular Structures in Monocytes in Cases of Malignant Disease. O. C. Gruner, Montreal.—p. 917.
Toxemias of Pregnancy: II. Nitrogen Metabolism. A. W. Rowe, Mary A. McManus and Gertrude A. Riley, Boston.—p. 923.
Verrucous Aortitis, with Especial Regard to Aneurysm Formation in Children. B. H. Neiman, Chicago.—p. 929.
Corynebacterium Diphtheriae Gravis Found in Maryland. Ona R. Whitley, Baltimore.—p. 943.
*Sedimentation Reaction in the New-Born. S. L. Ellenberg, New York. —p. 944.
*Observations on Vascular Response to Drainage of Ascites. W. A. Brams and J. S. Golden, Chicago.—p. 948.
Pigment Studies: I. Brown Skin-Adrenalin Color Reaction. C. Quinan, San Francisco.—p. 951.
Id.: II. Importance of Hydrolyzed Adrenalin as a Tissue Stain. C. Quinan, San Francisco.—p. 954.
Crystalline Elements in Stomach Lavage of Patients with Cholelithiasis. H. A. Rafsky, New York.—p. 959.
Effect of Smoking on Skin Temperature. H. J. Johnson and J. J. Short, New York.—p. 962.
Vitamin Therapy in Pulmonary Tuberculosis: VI. Effect of Viosterol on Carbon Dioxide Content, the Hydrogen Ion Concentration, Chlorides, Glucose and Urea Nitrogen of the Blood, and Protein, Calcium and Phosphorus of the Serum: Effect of Physiologic Saline on These Constituents During the State of Hypercalcemia. P. D. Crimm and J. W. Strayer, Evansville, Ind.—p. 966.
*Chemotherapeutic Studies with Sodium Ricinoleate (Soricin). J. A. Kolmer, Philadelphia; assisted by Anna M. Rule and B. Madden. —p. 972.
Specific Gravity of the Blood in Human Cancer: Four Hundred Observations, with a Note on Its Clinical Significance. D. Polowe, Paterson, N. J.—p. 983.
Determination of the Stroke Volume of the Heart. A. G. Keller Jr., Philadelphia.—p. 994.
Preparation and Use of Colloidal Carbon Solutions. J. M. Looney and F. C. Stratton, Worcester, Mass.—p. 996.
Method for the Separation of the Principal Constituents of Bile. R. U. Harwood, Montreal.—p. 1003.
*Modification of the Lange Colloidal Gold Test. F. Boerner and Marguerite Lukens, Philadelphia.—p. 1007.
Dropper for Performance of Fragility Test of Red Blood Corpuscles. H. P. MacNeal, Philadelphia.—p. 1009.
Sedimentation Time of Blood: Improved Apparatus for Routine or Research Tests. H. P. MacNeal, Philadelphia.—p. 1010.
Procedure in the Kuttner-Lichtenstein Microcolorimetric Method for the Determination of Organic Phosphorus: Note. D. Glick, New York. —p. 1012.
Simple Technic for Finding Coccidioides Immitis. W. P. Stowe, San Francisco.—p. 1013.
Estimation of Ethyl Alcohol in Brain. R. J. Abernathy, E. R. Russell and C. H. Thienes, Los Angeles.—p. 1014.
Diazo Reaction for Detection of Certain Local Anesthetics in Urine and in Tissues. W. E. Gibb and W. M. Dehn, Seattle.—p. 1018.
Cage for Mice and Rats. A. W. Blair and E. B. Carmichael, University, Ala.—p. 1020.

Sedimentation Reaction in the New-Born.—The results of Ellenberg's investigation show that the sedimentation time in the normal new-born infant seems to range between seven and twenty-three hours, with the average sedimentation speed for the entire neonatal period being about fifteen hours as compared to the two hours considered normal in adults. There is also a tendency for the sedimentation reaction to become less prolonged as the infant grows older. Silzer, in a study of the sedimentation speed of red blood cells from the umbilical vein of 800 infants, noted that 91.75 per cent of the cases showed a sedimentation time of more than twenty-four hours; 4.25 per cent showed sedimentation in from twelve to twenty-four hours; 3.8 per cent in from one to twelve hours, and 0.5 per cent in from thirty to sixty minutes. That the blood fibrinogen is probably the most important factor in the prolongation of the sedimentation reaction in infants is suggested by the work of Bruchsaler, who studied the relative sedimentation reaction and blood fibrinogen in infants and pregnant women and found that the maternal blood showed from 250 to 500 units of fibrinogen, while the blood of new-born infants contained from 64 to 125 units. The author discusses the use of the superior longitudinal sinus as a source of obtaining blood for the study of the sedimentation speed in the new-born infant.

Vascular Response to Drainage of Ascites.—Brams and Golden noted the effect of draining off abdominal fluid on the venous pressure, systolic and diastolic arterial blood pressure and pulse rate in ten patients having portal cirrhosis and chronic ascites. The venous pressure began to fall early during the drainage, and in four instances continued as more fluid was removed. The venous pressure at the end of the drainage was lower in every instance than before tapping was begun. Systolic and diastolic arterial pressures fell while the fluid was being removed. A fall in blood pressure was associated with faintness in one patient, whose pressure was low before the procedure was begun. A similar fall in other patients with previously normal blood pressure was not associated with such untoward symptoms.

Chemotherapeutic Studies with Sodium Ricinoleate.—Kolmer determined the toxicity of sodium ricinoleate by intravenous, intraperitoneal, intramuscular and subthecal injection in the lower animals. It is highly hemolytic and on intravenous injection may produce intravascular hemolysis with embolism. The maximal tolerated dose by this route of administration has been found to be approximately 0.035 Gm. per kilogram of weight. By intramuscular injection it may produce local irritation, with liquefaction necrosis when large amounts are injected. However, it is well borne systematically by this route of administration, as the maximal tolerated dose has been found to be more than 1 Gm. per kilogram of weight. It may also produce some irritation on intraperitoneal injection, but it is well borne by this route, since the maximal tolerated dose is as high as from 0.16 to 0.3 Gm. per kilogram of weight. By intracisternal injection the maximal tolerated dose has been found to be approximately 0.004 Gm. per kilogram of weight. Sodium ricinoleate is capable of inactivating or destroying diphtheria and tetanus toxins in the test tube and is especially destructive for the latter, although it would appear that the resulting toxoids are of low antigenic activity. It is but feebly antitoxic for the toxins of diphtheria and tetanus bacilli in guinea-pigs by various routes of administration. Sodium ricinoleate is of low bactericidal activity in the test tube and has been found without demonstrable curative activity in severe streptococcic, pneumococcic and tuberculous infections of the lower animals, as well as in experimental trypanosomiasis of rats, syphilis of rabbits and acute anterior poliomyelitis of monkeys.

Modification of the Colloidal Gold Test.—Boerner and Lukens recommend the following modification of the colloidal gold test, which requires but one-half the amount of reagent that is used in the original method. Eleven chemically clean test tubes are placed in a rack. Into the first tube 1.8 cc. of a 0.4 per cent solution of sodium chloride is placed, and 0.5 cc. in each of the remaining ten tubes. To the first tube 0.2 cc. of spinal fluid is added and mixed thoroughly. The authors feel that the dilutions will be more accurate if 0.2 cc. of fluid is diluted with 1.8 cc. of salt solution rather than 0.1 cc. of fluid with 0.9 cc. of salt solution. If the latter is used, the 1 cc. is not discarded from the first tube as directed in the next step. From the first tube 1 cc. is discarded, then 0.5 cc.

is transferred to tube 2, mixed thoroughly and 0.5 cc. removed and placed in tube 3; this is continued until the tenth tube is reached and then 0.5 cc. is discarded from this tube. The eleventh tube is used as a control. To each tube 2.5 cc. of colloidal gold solution is added, mixed thoroughly and set aside for twenty-four hours. The readings are made and recorded as in the original test.

Journal of Pediatrics, St. Louis

4: 715-850 (June) 1934

Trends in Pediatrics. J. Ruhräh, Baltimore.—p. 715.
Recurrent Abdominal Pain in Childhood. J. L. Morse, Boston.—p. 725.
*Atypical Chondrodystrophy. J. Warkany and A. G. Mitchell, Cincinnati.—p. 734.
Observations on Therapy in Erysipelas. P. E. Rotchman, Los Angeles.—p. 746.
Meningitis in the New-Born. C. M. Pounders, Oklahoma City.—p. 752.
Schilling Blood Count as Aid in Diagnosis of Acute Appendicitis in Children. J. L. Rogatz, New York.—p. 757.
Complications of Retropharyngeal Abscess. L. Rosenberg and M. Berke, Brooklyn.—p. 764.
*Effect of Extract of Pregnancy Urine on Hypopituitarism in the Male. R. H. Kunstadter and L. S. Robins, Chicago.—p. 774.
Acute Hemolytic Anemia in Childhood. A. S. Manne and L. Kuskin, Brooklyn.—p. 789.
Dermoid Cyst of the Midbrain. E. H. Baxter and G. B. Haber, Columbus, Ohio.—p. 795.
Status Thymicolymphaticus. M. Szabados, Brooklyn.—p. 798.

Atypical Chondrodystrophy.—Warkany and Mitchell describe a case that presented certain features of chondrodystrophy; but, as others were lacking, it was difficult to decide between this diagnosis and that of osseous dystrophy. In reality the case represented an intermediate form between the two diseases. In common with Morquio's disease it had normal skull and conformation of the face, lack of micromelia, lack of development of the epiphysis of the head of the femur, genu valgum, normal length of the fibula, waddling gait and some faulty development of the musculature. The apparent late onset of symptoms also speaks for Morquio's syndrome. The case resembled Parrot's type of chondrodystrophy in that the neck and trunk were of normal length, there was no platyspondylisis, and the humeri were short and thick.

Effect of Extract of Pregnancy Urine on Hypopituitarism.—Kunstadter and Robins treated eight male children having hypopituitarism with extract of pregnancy urine (antuitrin-S). Descent of the testicles was accomplished in all of three cases of cryptorchism. In three cases characterized by genital underdevelopment (testicles descended), treatment resulted in enlargement of the testicles and scrotum and the appearance of the secondary sex characteristics. In two cases characterized by pituitary obesity with normal genital development, treatment resulted in no increase in size of the genitalia. In four of five cases in which basal metabolism tests were made before and at the end of treatment, the basal metabolic rates were lowered below the lower limits of normal at the end of treatment. The inconsistency of the change in blood cholesterol level following treatment does not permit definite conclusions. In five cases in which sugar tolerance determinations were made before and at the end of treatment, the tolerance was lowered at the end of treatment. In seven of the eight cases there was an increase in growth of stature above the normal for the age following treatment. The extract of pregnancy urine did not stimulate loss of weight and did not alter the typical pituitary distribution of fat.

Journal of Pharmacology & Exper. Therap., Baltimore

51: 127-262 (June) 1934

Effect of Codeine, Dihydrocodeine and Their Isomers on Blood Pressure in Unanesthetized Dogs. R. H. K. Foster, Ann Arbor, Mich.—p. 153.
Effect of Codeine, Dihydrocodeine and Their Isomers on Blood Pressure in Anesthetized Cats. R. H. K. Foster, Ann Arbor, Mich.—p. 170.
*Pharmacology and Toxicology of the Azo Dye, Phenylazo-Alpha-Alpha-Diaminopyridine (Pyridium). R. P. Walton and E. H. Lawson, New Orleans.—p. 200.
Comparative Pharmacologic Study of Three Phosphoric Esters of Orthocresol. M. I. Smith, with assistance of E. F. Stohlman, Washington, D. C.—p. 217.
Further Studies of Methyl Cholines and Analogous Compounds. R. Hunt, Boston, and R. R. Renshaw, New York.—p. 237.

Pharmacology and Toxicology of Pyridium Hydrochloride.—Walton and Lawson observed that intravenous injections of pyridium hydrochloride in relatively large quantities (from 2.5 to 100 mg. per kilogram of weight) are well borne by laboratory animals. Gross cardiac irregularities are absent, as well as any pronounced effects on the coagulability of the blood. The sudden fall in blood pressure caused by the injection of the hydrochloride is transitory and is produced only by large doses injected rapidly. The hydrochloride is more toxic than the free base when injected intraperitoneally in rats. No marked toxicity is developed by the free base on standing open in solution. With fatal dosages there is no pronounced cyanosis or massive methemoglobin formation, as is the case with aniline, acetanilid and other so-called blood poisons. As judged by the emetic effects in dogs, the gastric irritation of the free base and of the hydrochloride is closely similar. Measurable amounts of methemoglobin, as determined by the Stadie-Van Slyke method, can be produced on oral administration of this drug. However, the relatively large dosage required indicates that this is not a complication to be expected in the usual clinical administration. Formation of methemoglobin by large overdoses is usually accompanied by a decrease in total pigment. This effect is probably closely related to the anemia produced in chronically treated animals. The most marked effects obtained by prolonged administration are liver degeneration and erythrocyte destruction. Since three dogs received an average of one and a half times the therapeutic dose for from forty-two to sixty-six days and suffered only moderate to slight effects on red cell counts, liver and kidney structures and general condition, the authors believe that this drug should not be dangerous if administered over short periods in the usual therapeutic dose of 10 mg. per kilogram. Prolonged administration involves possibilities of damage.

Medical Annals of District of Columbia, Washington

3: 153-184 (June) 1934

Weight Curve and Benedict Test During Pregnancy. H. W. Lawson, Washington.—p. 153.
Amebiasis, with Especial Reference to the Nondysenteric Type: Report of Thirty Cases. M. W. Perry, Washington.—p. 155.
Treatment of Pigmented Moles. H. F. Anderson and C. A. Simpson, Washington.—p. 159.
Mild Depressive Reactions. R. S. Cohen, Washington.—p. 162.

Michigan State M. Society Journal, Grand Rapids

33: 275-338 (June) 1934

Roentgenologic Aspects of Gastro-Enterology. C. G. Sutherland, Rochester, Minn.—p. 275.
Progress in the Care and Treatment of Mental Diseases. W. H. Riley, Battle Creek.—p. 285.
Simplified Diabetic Food Table. H. C. Robinson, Grand Rapids.—p. 291.
Superficial and Punctate Keratitis: Is It Also a Depression Entity? A. Dean, Grand Rapids.—p. 295.
*Whole Blood Transfusions as Treatment for Septicemias in Children. H. R. Roehm and H. B. Barker, Pontiac.—p. 299.
Dick Tests and Dick Toxin. T. N. Horan, Bloomfield Hills.—p. 301.
Bilateral Nephrostomy on Account of Ligation of Both Ureters Following Vaginal Hysterectomy: Case History. C. D. Brooks, Detroit.—p. 303.
Oculoglandular Tularemia: Case Reports. W. E. McGarvey, Jackson.—p. 304.
Subacute Bacterial Endocarditis in Pregnancy. B. L. Lieberman, Detroit.—p. 305.
Symptomatic Rupture of a Graafian Follicle. S. L. La Fever, Ann Arbor.—p. 306.
Survey of Sensitization in Students of the University of Michigan. B. Jimenez, Ann Arbor.—p. 310.

Blood Transfusions in Treatment of Septicemia in Children.—Roehm and Barker used whole, unmodified blood transfusions in six cases of septicemia in children; five recovered. The one death occurred thirty-six hours after admittance to the hospital and was the only case of hemolytic streptococcic infection in the series. One case was due to Staphylococcus albus, three to nonhemolytic streptococcus and one to an infection with a nonhemolytic streptococcus and an unidentified diphtheroid organism. Two of the six cases presented a generalized peritonitis, demonstrated by abdominal paracentesis and examination of the abdominal fluid both directly and by culture. The sole treatment in the six cases was transfusion of whole, unmodified blood, except for supportive measures, and operation in the one case of osteomyelitis. The author includes a case of peritonitis due to a ruptured appendix for a comparison of the observations in the peritoneal fluid in this type of peritonitis with that of peritonitis due to septicemia.

New England Journal of Medicine, Boston

210: 1243-1302 (June 14) 1934

The Importance of Disturbances in Nutrition in Edematous States. W. T. Longcope, Baltimore.—p. 1243.
Vital Importance of Relation of Hyperparathyroidism to the Formation of Certain Urinary Calculi and Its Remedy. R. Chute, Boston.—p. 1251.
Pyelo-Ureteritis Cystica. W. D. Bieberbach, Worcester, Mass.—p. 1254.
*Denervation and Displacement of the Ureter for Exaggerated Renal Colic: Report of a New Case. T. N. Hepburn, Hartford, Conn.—p. 1255.
Renal Sympathectomy: Report of Two Cases, Including One Fatality. E. Stone, Providence, R. I.—p. 1257.
Spontaneous Intraperitoneal Rupture of the Urinary Bladder: Report of Case. A. T. Jones, Providence, R. I.—p. 1262.
Right Renal Calculus Associated with Multiple Biliary Calculi. C. N. Peters, Portland, Maine.—p. 1264.
Report of Four Unusual Cases. W. G. Townsend, Burlington, Vt.—p. 1264.
Diagnosis and Management of Obstructive Jaundice. H. M. Clute and N. W. Swinton, Boston.—p. 1265.
Old Elbow Injuries: Operations for Bony Block. F. J. Cotton, Boston.—p. 1289.

Denervation of the Ureter for Renal Colic.—Hepburn points out that intractable renal colic in cases in which no obstructive cause can be found may be due to spastic obstruction of the ureter. Denervation and lateral displacement of the ureter is a logical surgical procedure in such a condition. He presents another clinical case to support this contention. The claim is made that denervation is more completely done from the retroperitoneal approach and that the added factor of lateral displacement makes less probable the regeneration of the spastic nervous mechanism and relieves any redundancy that may have developed in the ureter, thereby improving drainage of the renal pelvis and relief from pyelitis. While it is recognized that spastic ureteral obstruction is doubtless a common cause of renal colic in both sexes, the extreme spasms that require denervation are quite rare, and in all reported cases they have been found in women. Wharton's anatomic dissections revealing a connection between the sympathetic nerve supply of the ovary, testicle and ureter would seem to give a sound neurologic mechanism to substantiate the hypothesis of a probable sexual foundation for these severe spasms. That they occur more frequently in women than men is because sexual emotional defeat occurs more often in women than in men.

210: 1303-1354 (June 21) 1934

Artificial Menstruation: Effect of Female Sex Hormones in Amenorrhea. J. Rock, Boston.—p. 1303.
Congenital Scoliosis: Review of Seventy-Seven Patients. J. G. Kuhns, Boston.—p. 1310.
Anemias of Pregnancy. M. Davis and Elisabeth W. Walker, Boston.—p. 1315.
Bronchoscopy in Treatment of Pulmonary Abscess and Bronchiectasis. L. H. Clerf, Philadelphia.—p. 1319.
Study of Ten Years' Work at the Prendergast Preventorium of the Boston Tuberculosis Association. J. B. Hawes 2d, N. K. Wood and D. S. King, Boston.—p. 1321.
Management of Industrial Accidents Affecting the Employees of the New England Telephone Company. D. L. Lynch, Boston.—p. 1324.
*Artificial Ligaments at the Knee: Technic. F. J. Cotton and G. M. Morrison, Boston.—p. 1331.

Technic for Placing Artificial Ligaments at the Knee.—Cotton and Morrison describe a technic of placing artificial ligaments at the knee for ruptures of the lateral ligaments or crucials, the principle of which is the X suture placed deeply and the use of a fascial band. The essential thing about it all is that, with one or both laterals gone, satisfactory ligaments may be constructed out of fascia. To avoid interference with motion the resultant ligament must be attached near the radial center of the curve of the femoral joint surface, seen laterally just below the tip of the adductor tubercle, in making an internal lateral ligament and not too far back or front at the tibial attachment. To get strong bony mooring the fascial strip must go under a strong bridge of bone rather deep into the cancellous bone. That means two holes and, in order to avoid an undesirable broad ribbon of ligament, it means an X crossing of the false ligament. The fascia is drawn taut and knotted, and the knot is fastened with gut or fine silk sutures. The whole operation, even if both inner and outer sides are operated on, can be done without opening the knee joint. Motion is begun at three weeks and weight bearing at six weeks; then a convalescent splint is used, as there is a slacking up of the ligament. This slack "takes up" with time but is likely to persist for four months or more.

New York State Journal of Medicine, New York

34: 579-620 (July 1) 1934

The Family Physician: Past, Present, Future. A. MacFarlane, Albany.—p. 579.
Practical Considerations in Diagnosis and Treatment of Poliomyelitis. I. J. Sands, Brooklyn.—p. 587.
*Treatment of Erythroblastosis of the New-Born. D. P. Arnold and R. A. Downey, Buffalo.—p. 591.
Anemia of the New-Born. R. H. Dennett and L. O. Ashton, New York.—p. 595.
Cancer: Relation of General Practitioner to Cancer Problem. J. M. Swan, Rochester.—p. 597.
Id.: Relation of Pathologist to Cancer Problem. S. H. Curtis, Troy.—p. 598.
Id.: Relation of Surgery to Cancer Problem. P. L. Harvie, Troy.—p. 599.
Id.: Relation of Pathology to Surgery in Cancer Problem. R. S. Ferguson, New York.—p. 602.
Id.: Determination of Radiosensitivity. E. Kellert, Schenectady.—p. 603.
Id.: Relation of Radium to Cancer Problem. H. W. Carey, Troy.—p. 604.
Id.: Relation of Radiation to Cancer Problem. A. F. Holding, Albany.—p. 606.
Paper as a Medium for Less Expensive Chest Diagnosis. Margaret W. Barnard, New York.—p. 608.
Second Acute Perforation of Marginal Ulcer: Case Report. E. V. Denneen, New York.—p. 611.

Treatment of Erythroblastosis of the New-Born.—As soon as a case of erythroblastosis is suspected, Arnold and Downey take a hemoglobin, blood smear, and cross agglutinate. As soon as the diagnosis is made and the hemoglobin drops, from 100 to 125 cc. of compatible blood is given intravenously by cutting down on the internal saphenous vein at the internal malleolus or half way up the leg parallel and just to the medial side of the tibial border. The transfusion is repeated daily or every other day as indicated, depending on the general condition of the patient and the hemoglobin estimation. If a condition of insufficient fluid intake exists a slow intravenous drip can be instituted, and if the cannula remains patent it is often possible to retransfuse without having to open another vein. Transfusion replaces the hemolized blood with a functionally good blood and stops hemorrhage. The hemoglobin, which often drops as low as from 20 to 30 per cent, should be kept up to 70 or 80 per cent. Most cases require at least three and usually not more than four transfusions. The rest of the treatment is general hygiene with directions as to food, fluid intake being managed enterally or if necessary parenterally.

Northwest Medicine, Seattle

33: 189-224 (June) 1934

Migratory Pacemaker: Report of Case Including Autopsy Findings. M. B. Marcellus, Palo Alto, Calif.—p. 189.
Aortic Stenosis: Case Reports. E. L. Boylen, Portland, Ore.—p. 195.
Irradiated Blood Transfusion in Treatment of Infections. V. K. Hancock and E. K. Knott, Seattle.—p. 200.
Vitamin D Milk: Comparison of Methods of Production and Their Values. V. W. Spickard, Seattle.—p. 204.
Possibilities of Improving Dental Structures. R. Somers, G. C. Rotton and Jennie I. Rowntree, Seattle.—p. 206.
Dinitrophenol: Clinical Experiences. W. D. Hunt, Seattle.—p. 209.

Ohio State Medical Journal, Columbus

30: 409-472 (July 1) 1934

Developmental Anomalies Causing or Predisposing to Intestinal Obstruction. A. R. Moritz, Cleveland.—p. 429.
Indications for Surgical Intervention in Peripheral Vascular Disease. V. A. Dodd, Columbus.—p. 433.
Angiomas of Face and Mouth. C. M. Clark, Akron.—p. 438.
Complemental Feeding of the New-Born: Comparison of Plain Cow's Milk with Cow's Milk Modified by Base Exchange Method. A. Rogers, C. W. Peavy and Anita Williams, Columbus.—p. 441.
*Simple and Safe Way to Establish Suprapubic Drainage. C. E. Evans, Newark.—p. 442.

Establishing Suprapubic Drainage.—When it is impossible to introduce an indwelling catheter through the urethra, Evans establishes suprapubic drainage in the following manner: The tissues are infiltrated with 0.5 per cent solution of procaine hydrochloride. The skin above the space of Retzius is incised for about one-sixth inch with a small knife. A straight trocar is thrust into the bladder; the trocar is removed, leaving the cannula in the bladder temporarily. A soft rubber catheter is inserted through the cannula, which is in the bladder, gently pushing the catheter well into the bladder. The cannula is gradually pulled out of the bladder, slipped over the rubber catheter, which has been cut off at the distal end. The tissues

fit snugly around the catheter, holding it firmly in place, but the catheter can be retained by a suture or a safety pin with adhesive tape.

Pennsylvania Medical Journal, Harrisburg

37: 715-794 (June) 1934

Tumors of the Sympathetic Nervous System. D. Lewis, Baltimore.—p. 715.
Some Conditions Causing Cyanosis in the New-Born Infant. Ethel C. Dunham, New Haven, Conn.—p. 720.
Pruritus: Considerations on Its Pathogenesis. J. V. Klauder, Philadelphia.—p. 729.
Sinusitis, with Extensive Cranial Nerve Involvement. G. W. Schlindwein, Erie.—p. 733.
Breast Tumors: Study of One Hundred Cases. H. B. Gibby, Wilkes-Barre.—p. 735.
Bronchial Obstruction, with Especial Reference to Endobronchial Tumors. C. Jackson and C. L. Jackson, Philadelphia.—p. 740.
Gallbladder Disease in the Young. N. P. Davis, Pittsburgh.—p. 742.
Postural Treatment of Visceroptosis. W. O. Abbott, Philadelphia.—p. 743.
Mucin Therapy in Peptic Ulcer. C. R. Jones, Pittsburgh.—p. 746.
End Results of Fractures of Long Bones in Children. A. A. Walkling, Philadelphia.—p. 748.

Philippine Island Med. Association Journal, Manila

14: 209-248 (June) 1934

Rôle of the Private Practitioner in Preventive Pediatrics. A. Tupas, Manila.—p. 209.
Intrascapsular Extraction of Senile Cataract with Conjunctival Bridge. A. R. Ubaldo and C. D. Ayuyao, Manila.—p. 215.
Enforcement of the Food and Drugs Act in the Philippine Islands. A. J. Hermano, Manila.—p. 218.
Overlooked Factor in Susceptibility to the Common Cold. A. E. Ewens, Atlantic City, N. J.—p. 222.
Incidence of Postoperative Leakage in Suprapubic Cystolithotomy. J. Eduque and A. T. Zavalla, Manila.—p. 227.
A Phase of the Control of Veneral Diseases. R. G. Padua, Manila.—p. 230.

Public Health Reports, Washington, D. C.

49: 749-782 (June 29) 1934

Sickness Among Male Industrial Employees During First Quarter of 1934. D. K. Brundage.—p. 749.
Experimental Saponin Anemia in Albino Rat. E. F. Stohlman and M. I. Smith.—p. 751.
Table Showing Pellagra Preventive Value of Various Foods. W. H. Sebrell.—p. 754.

Radiology, Syracuse, N. Y.

22: 651-780 (June) 1934

Further Experience as to the Value of Preoperative Irradiation with X-Rays or Radium and with Prebiopsy and Postbiopsy Irradiation While Submitting the Sections to a Number of Experienced Surgical Pathologists. J. C. Bloodgood, Baltimore.—p. 651.
Combined Surface and Interstitial Radiation in Treatment of Mammary Cancer. A. Soiland, Los Angeles.—p. 657.
*Rationale of X-Ray Treatment in Encephalitis Lethargica. S. A. Goldberg, C. F. Baker and J. W. Hurff, Newark, N. J.—p. 663.
Where Is the Diaphragm? W. H. Stewart and H. E. Illick, New York.—p. 668.
Influence of Roentgen Rays on Growth and Phosphatase Activity of Bone. W. E. Wilkins and E. M. Regen, Nashville, Tenn.—p. 674.
Value of Arteriography: Report of Case. E. V. Allen and J. D. Camp, Rochester, Minn.—p. 678.
Treatment of Nevi: Review of Cases Treated During the Last Fifteen Years, with Analysis of End-Results. W. S. Newcomet, Philadelphia.—p. 684.
X-Ray Technic for Children. Dorothy I. Stunz, Iowa City.—p. 694.
Posttraumatic Para-Articular Ossification of the Knee Joint ("Köhler-Pellegrini-Stieda Shadow"). I. M. Odessky, Moscow, U. S. S. R.—p. 701.
Healing of Cavities in Pulmonary Tuberculosis: Roentgenographically Observed. W. W. Watkins, Phoenix, Ariz.—p. 707.
*New Adaptation for Cardiac Measurement of the Frontal Silhouette. M. Rona, New Brunswick, N. J., and W. G. Herrman, Asbury Park, N. J.—p. 721.
More on X-Ray Protection Standards. A. Mutscheller, New York.—p. 739.

Roentgen Treatment in Epidemic (Lethargic) Encephalitis.—Goldberg and his associates say that in the treatment of epidemic encephalitis only minute doses of the roentgen ray are necessary. In the three cases that they report this method of treatment shortened the duration of the illness and the period of hospitalization. Because of the removal of the pressure before permanent damage was done to the nerve cells, the treatment certainly obviated the devastating postencephalitic effects. The authors are now attempting to treat cases in which there has been a postencephalitic syndrome of long duration. While they do not expect any beneficial results, on account of permanent damage already done, they feel that this treatment should be given a trial.

Cardiac Measurement of the Frontal Silhouette.—Rona and Herrman made a study of 126 healthy and ninety-four pathologic hearts and present a new method of mensuration in the frontal plane. The method demonstrates the enlargement of either or both ventricles and differentiates between inflow and outflow tract changes on the frontal plane without the making of additional films. The method shows a reliable correlation of the various diameters to one another and to the size of the heart. It makes the cumbersome and unreliable frontal area measurement superfluous and supplements it with figures at which it is easy to arrive. The range and the mean average of the diameters showed a characteristic change in, and according to, the pathologic condition of the ventricles. Normally the left ventricle is the longest diameter but, if the right ventricle is longer, a pathologic condition should be looked for. Normally the right auricle is longer than the left. Pathologic conditions tend to enlarge the left auricle. A pathologic change in the right ventricle (inflow tract) goes together with a pathologic change in the left auricle (outflow tract).

Review of Gastroenterology, New York

1: 95-182 (June) 1934

Alcohol and Liver Function. R. Bauer and [illegible]). Wozasek, Vienna, Austria.—p. 95.
Hepato-Endocrine Syndrome. M. E. Binet, Vichy, France.—p. 104.
Hydrotherapeutic Measures in Hepatic, Gallbladder and Biliary Tract Diseases. W. S. McClellan, Saratoga Springs, N. Y.—p. 107.
Obstruction of the Small Intestine from Simple Causes. J. P. Grant, New York.—p. 121.
*Pepsin Therapy of Gastric Ulcer. K. Glaessner, Vienna, Austria.—p. 136.
Volvulus During Convalescence Following Perineal Prostatectomy: Report of Case. B. Halpert, New Haven, Conn.—p. 140.

Pepsin Therapy of Gastric Ulcer.—Glaessner is convinced that pepsin-hydrochloric acid stands in primary relation to gastric ulcer. He believes that the idea in employing pepsin therapy for the treatment of gastric ulcer is to introduce an organ therapy which derives its activity (1) as a substitution therapy and (2) as an antibody therapy. His experiments on animals show that under the influence of injections of neutral pepsin a rapid healing and return to normal occurs. When these experiments are transferred to mankind, the healing of all forms of ulcers is considerably hastened and, when this could not be accomplished at all, the healing was stimulated. He has treated more than 1,000 cases in the most varied stages and can say that pepsin therapy, of all bloodless treatments, shows the best results. The technic of the injection consists in the administration of an absolutely neutral pepsin solution, intramuscularly or subcutaneously. The solution must be sterile but not boiled, is harmless, and should not cause pain or anaphylactic symptoms. This injection, which is albumin free, has been proved to answer the purpose and can be given in ascending and descending doses, so that one series of treatments consist of ten ampules increasing, ten stationary, and ten falling doses, all numbered and complete in themselves. Coincidental with the injections, an internal medication of bismuth preparation is given: bismuth silicate, bismuth carbonate with magnesium citrate or powdered magnesium or chalk, bismuth-magnesia—which have the purpose of coating the gastric mucous membrane and decreasing the acidity. In addition to this, each patient before meals (five a day) receives oil in quantities of five times from 15 to 20 Gm. daily. This medication has the purpose of influencing the acid secretion. Finally the patient receives a diet consisting of milk, pastries, cheese, butter, eggs, finely ground meat, strained vegetables with butter, puddings, fish, sardines, tomatoes, scrambled eggs, omelet, honey, toast, mild hams, gelatin, fruit sauce and soups without meat extract. The diet should be sufficiently nourishing and given five times a day. The patient must lie down twice a day for two hours, and the use of diathermy, mudpacks or a hot water bottle will be of great value. The treatment is carried out strictly for thirty days, then for two months with somewhat increased diet without injections, and repeated two or three times at intervals of six months.

South Carolina Medical Assn. Journal, Greenville

30: 121-138 (June) 1934

Rural Health Movement. C. C. Applewhite, Columbia.—p. 123.
Syphilis and the General Practitioner. N. O. Eaddy, Pamplico.—p. 127.

Southern Surgeon, Atlanta, Ga.

3: 79-164 (June) 1934

Clinical Study of Liver Abscess: Report of Twenty Cases. J. R. Young, Anderson, S. C.—p. 79.
Treatment of Complicated Duodenal Ulcer. J. R. Phillips, Houston, Texas.—p. 98.
Thyroid Surgery in Cardiac Patients. T. C. Davison, Atlanta, Ga. —p. 103.
Drainage of Localized Peritoneal Abscess. A. E. Hertzler, Halstead, Kan.—p. 112.
Kraurosis Vulvae. T. D. Sparrow, Charlotte, N. C.—p. 117.
*Derangements of the Knee Joint. M. S. Henderson, Rochester, Minn. —p. 123.
Congenital Hypertrophic Pyloric Stenosis. D. B. Cobb, Goldsboro, N. C.—p. 140.
Indications for Excision of the Superior Hypogastric Plexus in Dysfunction of the Bladder. H. L. Douglass, Nashville, Tenn.—p. 149.

Derangements of the Knee Joint.—Henderson reviews the records of 605 patients operated on for derangement of the knee, in which 626 operations were performed. His operation consists of isolation of the patella and patellar tendon down to its insertion. An external incision is made along the external capsule, a little above the upper margin of the patella, and is carried down to the patellar tendon. The dissection of the patellar tendon is carried out further, and its insertion is lifted up along with a good-sized flake of bone and transferred well to the inner side on the tibia and at a slightly lower level. The area to which it is transferred is thoroughly freshened, denuded and roughened. The end of the patellar tendon is held firmly over this area and a beef bone screw is inserted, locking it in position. The external capsule is overlapped, as in hernia, and chromic catgut sutures are used. The author believes that, if this technic is properly and accurately carried out and protection afforded long enough after operation, a cure is practically assured. Following operation, the knee is put at rest in a plaster-of-paris cast, extending from the groin to the ankle and is held in that position for at least three weeks before mobilization is started. Motion is begun gradually, right angle flexion not being permitted for at least three months. The operation alters the mechanism somewhat, and some patients complain of stiffness and of pain, but these gradually disappear. If the insertion of the patellar tendon is moved far enough inward and held there until it becomes firmly attached, dislocation of the patella is impossible.

Southwestern Medicine, Phoenix, Ariz.

18: 185-218 (June) 1934

Indications for Surgery in Treatment of Diseases of the Thyroid. H. W. Rice, Morenci, Ariz.—p. 187.
X-Ray and Radium Treatment of Hyperthyroidism. J. W. Cathcart, El Paso, Texas.—p. 191.
The Heart in Thyroid Disease. G. Werley, El Paso, Texas.—p. 194.
Hypothyroidism. S. C. Davis, Tucson, Ariz.—p. 198.
Intrapleural Pneumolysis, an Aid in Restoring Function to the Tuberculous Lung. V. Randolph, Phoenix, Ariz.—p. 201.
Food Allergy (Résumé of Literature; Personal Observations). O. H. Brown, Phoenix, Ariz.—p. 206.

Surgery, Gynecology and Obstetrics, Chicago

58: 935-1064 (June) 1934

Experimental Studies in Gastric Physiology in Man: II. Study of Pyloric Control; Rôles of Acid and Alkali. H. Shay and J. Gershon-Cohen, Philadelphia.—p. 935.
*Gastric Lavage in Treatment of Pyloric Obstruction: Experimental Study. N. E. Freeman and R. L. Brown, Boston.—p. 956.
II. Determination of Weight and Age of Fetus in Utero by the Aid of Stereoroentgenometry. S. H. Clifford, Boston.—p. 959.
The Grading of Epidermoid Carcinoma. Olive Gates and S. Warren, Boston.—p. 962.
An Early Human Embryo in Situ. R. Tennant and Elizabeth M. Ramsey, New Haven, Conn.—p. 968.
Congenital Torticollis: Review and Result Study. G. deN. Hough Jr., Springfield, Mass.—p. 972.

Gastric Lavage in the Treatment of Pyloric Obstruction.—Freeman and Brown found that daily aspiration of the contents of the stomach was necessary following pyloric obstruction in cats. They observed that the animals which were subjected to repeated emptying of the stomach survived considerably longer than untreated controls. Therefore in order to determine the factors responsible for the longer survival of the treated animals they fed healthy adult male or nonpregnant female cats that had fasted for twenty-four hours a mixed diet of meat and milk. Emptying the stomach and washing it out allowed the animals to live almost twice as long as those which accumulated their secretions until they vomited. In no case did a cat whose stomach was regularly emptied die sooner than the control animal. The average daily loss of water and chloride per unit of body weight was decreased when gastric lavage was repeatedly performed. The diminished rate of chloride loss was associated with a higher level of chloride in the blood. While the average fall in the chloride level of five untreated cats was from 677 to 444 mg. per hundred cubic centimeters in 3.4 days, in four treated cats the average fall was only from 686 to 527 mg. per hundred cubic centimeters in 4.5 days. The body temperature during the period of dehydration after pyloric obstruction varied only within 2.5 degrees F., generally being slightly lower at the end of the experiment. Analyses of the nitrogen of the gastric contents revealed only small quantities of protein, 0.25 per cent in an average of five experiments. The nonprotein nitrogen content increased as the dehydration progressed. In one cat the concentration increased steadily from 74 mg. on the first day after operation to 400 mg. per hundred cubic centimeters on the fifth day. No correlation between the time of survival and the loss of nitrogen was found. The results obtained seem to indicate that the improvement in general condition after gastric lavage was due at least in part to a reduction in the rate of the loss of water and electrolytes from the body into the lumen of the stomach. The authors suggest that in clinical cases the benefit derived from gastric lavage is to be attributed in part to the decrease in the rate of the loss of chloride and fluid from the body into the stomach.

Tennessee State Medical Assn. Journal, Nashville

27: 187-234 (June) 1934

Angina Pectoris as Related to Coronary Disease. E. A. Guynes, Knoxville.—p. 187.
Emotions and Their Relationship with Endocrine Glands. C. C. Turner, Memphis.—p. 193.
Eczema. H. King and C. M. Hamilton, Nashville.—p. 199.
*Needle (Aspiration) Biopsy. R. P. Ball, Chattanooga.—p. 203.
Retrodisplacements of the Uterus. W. T. Black, Memphis.—p. 207.
Peroral Endoscopy and Gastroscopy. F. L. Alloway, Kingsport.—p. 212.
Vincent's Angina. H. E. Christenberry, Knoxville.—p. 216.

Aspiration Biopsy.—Ball describes a method of needle biopsy in which the skin is prepared with iodine and alcohol and is anesthetized with a 1 per cent solution of procaine hydrochloride. A needle is slipped into the mass of the tumor, joint or bone, and a 50 cc. luer syringe is connected. The plunger of the syringe is then pulled out as far as possible and grasped with the palm of the hand to hold the plunger and keep the vacuum. With the other hand the barrel of the syringe is rotated on the plunger with a slight withdrawal of the needle, about 3 or 4 mm., and the needle is pushed back to its former position. The aspirated material is usually blood stained. After from 2 to 5 cc. has been aspirated the needle is removed, with continued traction on the plunger of the syringe. As soon as the needle is removed from the skin there will be a release of vacuum by the air rushing through the needle, which clears the needle of any fragments of tissue. The syringe is not to be emptied by closing the plunger. The plunger is removed and gauze is used to wipe out the syringe. The contents are spread on gauze moistened with sodium chloride solution and all bits of tissue are separated from the clot and piled together on a dry piece of paper and then dropped in fixing fluid. Sections are made in the usual manner, preferably by paraffin embedding. If it is desirable or indicated, primary smears and cultures may be made from the material before spreading it on the gauze.

Virginia Medical Monthly, Richmond

61: 189-250 (July) 1934

Chimborazo Hospital, Confederate States Army, America's Largest Military Hospital. E. E. Hume, Washington, D. C.—p. 189.
Etiology, Pathology and Treatment of the Present State of General Practice. T. H. Daniel, Charlottesville.—p. 195.
Diagnosis and Treatment of Gas Bacillus Infection. C. S. Stone Jr., University, and H. B. Holsinger, Farmville.—p. 200.
Management of Acute Coronary Occlusion. W. B. Porter, Richmond. —p. 205.
Observations on Nasal Allergy. O. Swineford Jr., University.—p. 208.
Chronic Nontuberculous Pulmonary Infections. C. L. Savage, Richmond.—p. 212.
Surgical Relief of Pain. J. G. Lyerly, Richmond.—p. 221.
Some National Problems of Today That Are of Special Interest to the Medical Profession. J. A. Noblin, East Radford.—p. 224.
The Infected Diabetic. J. Hundley Jr., Lynchburg.—p. 226.
Treatment of Infections of the Central Nervous System by Forced Spinal Drainage. R. F. Gayle Jr., Richmond.—p. 228.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

9: 133-200 (June) 1934

Vitamin A Deficiency in Children: Part II. Vitamin A Requirements of Babies: Skin Lesions and Vitamin A Deficiency. Helen M. M. Mackay.—p. 133.
Epidemic of Acute Encephalitis in Young Children. Agnes R. Macgregor and W. S. Craig.—p. 153.
Etiology of Idioglossia. I. J. Wolf.—p. 171.
Intradermal Tuberculin Reaction, with Especial Reference to So-Called Surgical Tuberculosis. J. W. E. Cory.—p. 177.
*Sensitivity to Cow's Milk Proteins in Acute Gastro-Enteritis. K. H. Tallerman.—p. 189.

Sensitivity to Cow's Milk.—Tallerman tested the serums of eighteen infants in order to determine whether or not reagins were present in the blood of these children rendering them allergic to cow's milk. Eight of these infants gave completely positive results, while only two cases gave consistently negative results. Five gave results that were positive in one or more tests but equivocal in others. The remaining three gave contradictory results. Of the whole series of forty-two Prausnitz-Küstner reactions carried out, 61.9 per cent gave definitely positive results and only 19 per cent were definitely negative. It appears that reagins to cow's milk proteins are frequently present in the blood of infants suffering from gastro-enteritis. From this one may conclude that many such infants are hypersensitive to cow's milk proteins. It is possible that some of the toxic symptoms of acute gastro-enteritis may be in the nature of an allergic reaction.

British Journal of Ophthalmology, London

18: 241-304 (May) 1934

Penetrating Wounds of the Orbit. T. Colley.—p. 241.
Affinity of the Vitreous Body to Dilute Plasma Gels. S. Duke-Elder and E. B. Robertson.—p. 251.
Injury to Both the Orbits with a Revolver Shot Causing Little Damage. J. N. Duggan.—p. 253.
Divergence of the Primary Position of the Eyes. N. A. Stutterheim.—p. 256.
Use of Artificial Sunlight for Illuminating Test Apparatus and the General Lighting of Examination Rooms. R. E. Wright.—p. 260.
Fogging for the Focal Interval of Sturm. N. Glegg.—p. 264.
Central London Ophthalmic Hospital: Report of Squint Department, September, 1932-1933. Sigrid Pearson and Sheila Mayou.—p. 267.
Protective Mask for Use After Operations on the Eye. H. Kirkpatrick.—p. 271.
An Ophthalmic Rule. N. B. Harman.—p. 273.
New Conjunctival Fold Fixation Forceps. D. S. Stewart.—p. 274.

18: 305-368 (June) 1934

Certain Clinical Features of the Normal Limbus. B. Graves.—p. 305.

British Medical Journal, London

1: 1063-1104 (June 16) 1934

Pregnancy Diagnosis in Theory and Practice. J. M. Robson.—p. 1063.
*Aneurysm of the Innominate Artery Treated by Proximal Ligature. H. S. Souttar.—p. 1066.
Hypertonic Rectal Saline for Intracranial Injury in the New-Born. A. Moncrieff.—p. 1068.
Observations on Experimental Shock. R. L. Holt and A. D. MacDonald.—p. 1070.
New Principle in Ethyl Chloride Anesthesia for Oral Surgery. R. B. Gould.—p. 1073.

Aneurysm of Innominate Artery Treated by Proximal Ligature.—Souttar points out that ligature of the innominate artery for aneurysm is a well established surgical procedure, in which the risks of the operation are entirely justifiable in view of the gravity of the condition. Technically the operation may be easy of achievement, or the difficulties from adhesions may render it impossible. Apart from the risk of hemorrhage at the time of operation, the two chief dangers to be feared are interference with the cerebral circulation and interference with the circulation in the arm. The latter does not appear to be as serious as might be imagined, probably because during the existence of the aneurysm a wide collateral circulation has opened up. The danger to the brain, however, must always remain a serious one, and there would seem to be no means of discovering the extent of the risk in any particular case. The author is convinced that the method adopted, of operating under local anesthesia and of applying tentative ligatures to the arteries, is a sound one. General anesthesia involves a disturbance to the circulation, which cannot be anything but inimical to the interests of the patient, while it precludes entirely the important information, which a conscious patient can give, as to the effects of occluding the circulation of a large vessel.

Glasgow Medical Journal

3: 205-240 (June) 1934

Supersensitiveness: Outline of Chief Facts and Views as to Its Nature. C. H. Browning.—p. 205.
Chronic Lymphatic Edema and Its Treatment by the Kondoleon Operation: Note. R. Mailer.—p. 213.

Irish Journal of Medical Science, Dublin

No. **101:** 193-240 (May) 1934

Pulmonary Tuberculosis Among Outpatients. H. Quinlan.—p. 193.
Ancylostomiasis on the Gold Mines of the Witwatersrand. J. H. Hodgman.—p. 203.
Thrombo-Angiitis Obliterans. P. T. O'Farrell and W. Doolin.—p. 223.

Journal of Hygiene, London

34: 145-282 (June) 1934

Chemistry and Pharmacology of Lathyrus Peas. R. Stockman.—p. 145.
Influence of Avitaminosis on Course of Trypanosome Infection. J. Fine.—p. 154.
Vernes Test for Diagnosis of Tuberculosis in Dairy Cattle: Investigation on Its Applicability. A. T. R. Mattick and M. I. Christian.—p. 157.
*Fatal Case of Silicosis. S. V. Gudjonsson and C. J. Jacobson.—p. 166.
Bacteriologic Examination of Mussels. J. W. Bigger.—p. 172.
Hemophilic Bacteria of the Upper Respiratory Tract: Appearance of Virulent Forms in Relation to Upper Respiratory Infections. L. Hoyle.—p. 195.
*Some Fermentative Varieties of Bacillus Paratyphosus B. S. H. Warren and J. L. G. Iredale.—p. 203.
Anaerogenic Fermentation with Paratyphoid Bacilli. S. H. Warren and J. L. G. Iredale.—p. 213.
Incidence of Intrathoracic Tumors in Leeds. Georgiana M. Bonser.—p. 218.
Cause of Convulsive Ergotism. R. Stockman.—p. 235.
Sources of Infection in Undulant Fever. J. Smith.—p. 242.
*Experimental Investigation on Influence of Emulsions of Oils and Fats on the Lethal Effects of Bacterial Toxins. G. N. Myers.—p. 250.
Typhoid Epidemic in Cork City, 1920. J. C. Saunders.—p. 265.
Minimal Temperatures of Growth of Some Bacteria. R. B. Haines.—p. 277.

Silicosis.—Gudjonsson and Jacobson describe a typical uncomplicated case of silicosis with fatal outcome in a porcelain turner. Microscopic examination of lung tissue and of ashes from it showed numerous mineral needles resembling those found in kaolin from the factory. The necropsy revealed no other condition that might have caused death. On the other hand, the changes in the lungs were so extensive and advanced that it is surprising that the man was able to go about with such lungs, as the lung tissue capable of respiratory function must have been reduced greatly in amount. The changes found in the heart were ascribed to the impaired circulation of the blood in the silicotic lungs—a condition involved in most cases of marked silicosis. It is certain that the dust this man inhaled for years contained much silicic acid. The observations in this case support in part the theory advanced by W. R. Jones, that silicosis can be produced by fibrous minerals.

Varieties of Bacillus Paratyphosus B.—Warren and Iredale studied a series of nine cases of paratyphoid due to infection with anaerogenic strains of Bacillus paratyphosus B. Biologic examination of the strains shows no difference from the ordinary type of B. paratyphosus B except the inability to produce gas from any "sugar." Serologically the strains are identical with the aerogenic type of the organism. These anaerogenic strains retain their inability to produce gas from "sugar" after subculture on artificial mediums for a considerable period, and cultivation on a number of different fluid mediums failed to restore the gas producing power. In the organic salt fermentation test, B. paratyphosus B gives a characteristic reaction, which is also given by the anaerogenic strains. The fermentative varieties of B. paratyphosus B defined by Kristensen and Bojlèn are definite and can be identified as a matter of practical routine, but the test is delicate and requires care in the preparation of the mediums and especially in the Bitter test. The existence of these apparently stable fermentative varieties of B. paratyphosus B is likely to be of use in epidemiologic investigations.

Influence of Emulsions of Oils on Lethal Effects of Bacterial Toxins.—Myers states that olive oil emulsions, in

a fine state of division, when mixed with superlethal doses of diphtheria toxin, protect animals from the lethal effects of the toxin when injected subcutaneously. Olive oil emulsions also protect against the effects of superlethal doses of the toxins of Clostridium tetani, Clostridum welchii and Clostridium oedematis-maligni (Koch). The addition of a suitable emulsifying agent to give the emulsion greater stability makes the protection against the toxins absolutely secure. Emulsions of petrolatum have a similar protective action against lethal doses of these toxins, but the cream of cow's milk affords no protection. Coarse emulsions of these oils do not exhibit this protective action. The toxins of Corynebacterium diphtheriae, Clostridium tetani, Clostridium welchii and Clostridium oedematis-maligni are more soluble or have a greater affinity for water than oils. Solutions of acacia do not influence the lethal effects of these toxins. Diphtheria toxin when mixed with stable and finely divided emulsions of olive oil or petrolatum, before being injected subcutaneously, does not produce myocardial degeneration as observed in control animals.

Journal of Laryngology and Otology, London

49: 357-428 (June) 1934

*Abscess of the Brain. K. W. MacKenzie.—p. 357.
Atrophic Rhinitis. J. Adam.—p. 375.
Notes on a Case of Suppuration in a Crista Galli Cell. C. M. Eadie.—p. 397.

Abscess of Brain.—MacKenzie reports eight cases of brain abscess, six of which were cured. Seven of the cases were the result of chronic suppurative otitis media. Four of these were temporosphenoidal lobe abscesses, two of which were cured, and three were cerebellar abscesses, all of which were cured. In six of the eight cases drainage was done at operation and all the patients recovered. A decompression operation was performed in one of the remaining two cases, but before a final operation for drainage of the abscess could be carried out the abscess burst into the ventricle and the patient died. In the other, an exploratory operation was undertaken without success, but ultimately the abscess burst through the surgical wound and the patient died eight days later. In the treatment of a furuncle or an abscess, incision before it is considered "ripe" delays healing, but, if operative intervention is postponed until local immunity has developed and a wall of inflammatory tissue has surrounded the pus, evacuation of the contents is followed by rapid cure. Just as too early incision will delay healing, so also will unnecessary delay be injurious. It is the author's procedure to postpone operation until pressure symptoms have become well marked, by which time a local immunity has been developed. Besides this development of immunity, delay renders the discovery and drainage of the abscess easy and also results in an immediate hernia of the brain on incision of the dura, which, by compressing the dura against the bony margins of the trephine opening, lessens the risk of the onset of meningitis. In seven cases drainage was done through a clean trephine wound of from 1 to 1½ inches in diameter, situated either in the squamous portion of the temporal or posterior to the sigmoid sinus. In the eighth case of frontal lobe abscess, drainage was effected through the opening caused by an osteomyelitis of the frontal bone. The author's conclusions are that a "delayed" operation is necessary for success and that drainage through a large trephine wound is more likely to be successful than drainage through the mastoid alone. This allows the removal of the brain tissue sloughs, which, if retained, are liable to give rise to fresh abscess formation. The retention of tubes beyond forty-eight hours is unnecessary in most cases, for invariably by that time the hernia has forced them out, along with sloughs of brain tissue. In seeking for an abscess it is an advantage to use angular forceps, as the blades can be expanded and so allow the pus to escape.

Tubercle, London

15: 385-432 (June) 1934

Sanocrysin Therapy: Survey of One Hundred Consecutive Cases. C. E. H. Anson.—p. 385.
Circular Focus as Initial Anatomic and Roentgenologic Evidence of Tuberculosis Reinfection. A. Fraenkel.—p. 395.
Simultaneous Bilateral Spontaneous Pneumothorax: Review of the Literature and Report of Case Due to Congenital Cysts of the Lungs. W. R. Oechsli and S. H. Miles.—p. 402.

Presse Médicale, Paris

42: 833-856 (May 23) 1934

*Presence of Specific Principle in Urine of Cancerous Patients: Application to Diagnosis of Cancer and Attempted Interpretation of Nature of This Principle. M. Aron.—p. 833.
Necessity of Double Vertebral Profile in Spondylography. A. Zimmern and J.-A. Chavany.—p. 836.
Presence of Tuberculous Ultravirus in Blood of Patient Affected with Parapsoriasis: Almost Complete Cure by Vaudremer's Vaccine and Gold Salts. P. Ravaut and Rabeau.—p. 837.
Pathogenesis and Different Forms of Phrenocardiospasms. J. Guisez.—p. 840.
Reduction of Fractures Under Fluoroscopy. A. Chakir.—p. 843.
Acute Attack of Hyperazotemia with Grave Uremic Phenomena Connected to Hypochloremia in Chronic Nephritis and Cure by Rechloridation. H. Chabanier, C. Lobo-Onell, P. Lieutaud and E. Lelu.—p. 844.
*Bacillary Expectoration in Older Children Without Disorders of General Condition, Fever or Clinical Signs, and With Roentgenogram of Slight Common Sclerosis: Pulmonary Tuberculosis or Bacillus Carriers? F. Faure and Matinier.—p. 846.
*Rapid Cholecystography with Epinephrine. S. Zanetti.—p. 848.
Isolated Anesthesia of Stellate Ganglion: Its Technic, Indications and Results. R. Leriche and R. Fontaine.—p. 849.

Specific Principle in Urine of Cancerous Patients.—The hypothesis that malignant tumors could be the source of some substance excreted in the urine served as the guiding point for the investigations of Aron. The first problem in this study consisted in the concentration of urine. Experience showed that the active principle was present in the precipitate formed by the addition of pure acetone or 95 per cent alcohol to the urine. It is impossible to say yet whether it is really precipitated or simply absorbed. The method employed was to add in a large flask a quantity of freshly passed urine to three times its volume of 95 per cent alcohol. After shaking, a precipitate forms and settles slowly. After the sedimentation is completed the supernatant fluid is decanted. The remaining material is centrifugated. The precipitate, briefly dried, is suspended in from 5 to 10 cc. of physiologic solution of sodium chloride for each hundred cubic centimeters of urine and the suspension is violently shaken for a long time. After filtration the active principle is found in the filtrate, to which is added a few drops of 3 per cent tricresol and which is kept in the refrigerator. This filtrate is injected subcutaneously in rabbits weighing from 1,500 to 2,000 Gm. It is advisable to administer to the animals the solution of the precipitate corresponding to from 750 to 1,000 cc. of urine. The injections are repeated for two or three days at least. The necropsy is performed two days after the last injection. The suprarenals of the rabbits treated were removed, dissected and fixed for several hours in Zenker's solution formalized 7 to 100. After embedding in petrolatum, sections from 5 to 6 microns thick are cut and colored simply with an erythrosin stain. In the cases of cancer subjected to the test the suprarenal cortex showed typical modifications. The fascicular zone is formed of cells the cytoplasm of which under physiologic conditions is filled with lipid inclusions. Liquefied by the histologic reactions, the latter leave the cytoplasm finely vacuolated and communicate to it a spongy aspect on which is based the term spongiocytes. Under the influence of cancerous urine, however, the fatty vacuoles disappear, the spongiocytes diminish in volume and their cytoplasm takes on a compact and brightly staining appearance. The urine of healthy persons and persons suffering from acute and chronic diseases have so far failed to give the reaction. The author has also carried out some preliminary experiments with rabbits which indicate the possibility of the formation of antibodies in the blood of rabbits in the presence of the principle extracted from the urine of cancerous patients. The hypothesis must therefore be considered that this principle is a specific antigen.

Expectoration of Tubercle Bacilli in Apparently Normal Children.—Faure and Matinier describe the cases of three older children who were expectorating tubercle bacilli but had no signs of tuberculosis. All the children possessed a true or suspected tuberculous heredity. The roentgenograms showed only the signs of ordinary sclerosis. Physical development was above the average, the first having gained more than 19 Kg. in three years, the second 12 Kg. in two years and the third more than 13 Kg. in one year. Nevertheless they all expectorated tubercle bacilli without fever, functional or general

symptoms or auscultatory signs. The duration of positive sputum was approximately one month for the first child, two months for the second and eight months for the third. After considering various possible explanations for this condition, the authors state that they favor the hypothesis that these children were merely carriers of tubercle bacilli.

Rapid Cholecystography with Epinephrine. — Zanetti suggests a modification of the cholecystography method of Antonucci. In order to simplify the method he proposes a subcutaneous injection of epinephrine to provoke hyperglycemia. A dose of 1 mg. is sufficient to obtain a good "demonstration of load." To reinforce the action of the medicament one can administer from 80 to 100 Gm. of sugar dissolved in a little water one hour before the injection, but this is not necessary. The shadow of the gallbladder appears two hours after the injection in healthy persons. Sometimes its appearance is delayed until the sixth or even the tenth hour. This delay has an important diagnostic value because it indicates a functional disorder of the liver or of the gallbladder which the usual normal cholecystography cannot reveal. Epinephrine also possesses the advantage of strengthening the patient against the dangers of collapse. The shadow of the bladder, although a little less distinct than that obtained by the usual methods, is nevertheless sufficient for a good roentgenologic demonstration. The author assigns three advantages to the use of epinephrine: (1) the early appearance of the vesicular shadow, (2) the possibility of studying the hepatic function, and (3) the possibility of differential diagnosis of gallbladder diseases. It has also the advantage of being simple and of practical use.

Revue de Chirurgie, Paris

53: 367-430 (May) 1934

Treatment of Nonresectable Duodenal Ulcer by "Resection by Exclusion." H. Finsterer.—p. 367.
Postoperative Pulmonary Complications: Experimental Pulmonary Embolism. J. Bottin.—p. 387.
*Treatment of Central Pulmonary Hydatid Cysts. J. Chavannaz.—p. 414.
*Characteristic Phenomenon of Gastric Ulcer. V. Bojovitch.—p. 427.

Treatment of Central Pulmonary Hydatid Cysts. — Chavannaz thinks that it is unjustifiable to leave all central hydatid cysts of the lung alone. Although they often become cortical and may be operated on, or stationary and relatively inoffensive, or progress to the hilus and rupture and drain spontaneously along the natural passages, he feels that surgical intervention is often advisable. The operation by thoracotomy in a free pleura allows palpation of the lung and is less dangerous than puncture. After evacuation of the cyst and removal of the membrane as far as possible, drainage is indicated. As a rule, the bronchocutaneous fistulas following intervention heal spontaneously after a variable interval.

Characteristic Phenomenon of Gastric Ulcer. — Bojovitch describes a condition of the abdominal wall in gastric ulcer which he believes is characteristic. In making the injections for local anesthesia, the needle always has difficulty in piercing the skin, which offers considerable resistance. In cutting the skin and adjacent aponeurosis in the epigastric region, the knife meets a special induration of these tissues. The leaves of the aponeurosis, once cut, separate like the edges of a cut cord in such a manner that difficulty is encountered in reuniting them by suture. The exact mechanism of production of this condition is doubtful, but it appears that disorders of the nervous and circulatory systems of the stomach affect the skin and the abdominal layers and interfere with their nutrition.

Clinica Medica Italiana, Milan

65: 402-508 (May) 1934

Studies in Pathology of Oxalic Acid: Normal Oxalemia and Oxalemia in Different Pathologic Conditions. F. Marcolongo and V. Barone.—p. 402.
*Mobilization of Histiocytic Elements in Circulation Following Inoculation of Various Micro-Organisms. E. Frola.—p. 465.
Research on Fructose Metabolism: Action of Insulin, Epinephrine and Thyroxine on Use of Fructose. P. De Lucia and E. Claar.—p. 493.

Histiocytic Elements in Blood Following Inoculations. —Frola found that inoculation of micro-organisms and various dead bacterial bodies in guinea-pigs produced marked changes in the blood, such as neutrophilic polynucleosis, lymphocytopenia, monocytosis and histiocytemia. Live micro-organisms as differentiated from the dead bacterial bodies generally show a more important monocytic reaction. They are, above all, responsible for vacuolated elements in the circulation. Of the strains used, Flexner's bacillus, colibacillus and the diplococcus manifested great polymorphonuclear production, average monocytosis and poor histiocytosis, especially lymphocytoidemia and monocytoidemia. Eberth's bacillus, nonhemolytic streptococcus and scarlatinous streptococcus showed slight polymorphonuclear production and ordinary histiocytosis, generally of the lymphocytoids and monocytoids. The hemolytic streptococcus produces marked histiocytosis. The mobilization of histiocytic elements in the circulation differs according to the greater or lesser pathologic relation of the micro-organisms to the mesenchymal apparatus. Monocytic and lymphocytic elements found in the circulation at approximately the same age as young monocytes and monocytes of Rieder's type are due to an irritation of the mesenchymal tissue which, owing to the action of bacterial toxins, permits the passage of not fully matured elements into the circulation. The appearance of endothelial cells in the circulation only after particularly intensive treatments and at the acme of the disease, the rapidity of its appearance and disappearance, the presence of regressive lesions and the signs of a progressive histolysis help to establish that the endothelial cell is an expression of true exfoliation and a passage in the circulation of elements that have lost their normal characters and normal functions through lesions produced in the process of defense against infections. The study of mononuclear circulating elements is an important clinical sign in revealing the reactivity of the mesenchymal tissue; the monocytosis expresses a proliferative mesenchymal reactivity of normal evolution (hyperplasia of heterotypical evolution); the lymphocytoid and monocytoid elements in the blood indicate a proliferative reactivity of rapid evolution (hyperplasia of heterotypical evolution), and the endothelial elements point to diffuse degenerative mesenchymal lesions. The first follows stimulating lesions, the second mild toxic actions and the third serious toxic actions.

Policlinico, Rome

41: 305-380 (June 1) 1934. Medical Section

*Contribution to Study of Phylaxis. R. Rubegni.—p. 305.
Reticulocytes and Anemia: Biologic, Diagnostic and Prognostic Significance. A. Gualdi.—p. 320.
Pharmacodynamic Stimuli and Lactacidemia in Neurovegetative Dystonia. G. Benedetti.—p. 334.
Localization of Micro-Organisms in Kidneys After Ligation of Pedicle in Course of Experimental Bacteremia. N. Cirillo.—p. 370.

Phylaxis.—Rubegni found that horse serum has a protective action against sparteine poisoning in keeping with the characteristics of the process of phylaxis in guinea-pigs and rabbits. The defense is relative, since some of the protected animals do not show resistance to the action of the poison and die. The phenomenon becomes manifest after six hours, reaches its maximum by eighteen hours, and is completely ended after thirteen days. The protection exercised by the serum against sparteine may be repeated at will; the animals are finally made to tolerate enormous doses of poison and simultaneously develop increased resistance to it and habit formation. The author does not believe that the sparteine treatment offers any protection against the anaphylactic shock of horse serum. If it does, such protection is incomplete. The sparteine treatment combined with the injection of serum does not modify the production of antibodies and does not protect in any way against histamine intoxication.

Medicina Ibera, Madrid

1: 849-892 (June 23) 1934

Surgery in War Time. F. de A. Bergós Ribalta.—p. 849.
*Muscular Chemism in Human and Experimental Diabetes. G. Marañón, J. A. Collazo and J. Almela.—p. 852.

Muscular Chemism in Human and Experimental Diabetes.—Marañón and his collaborators state that, by biopsy of the deltoid muscle in man and of the leg muscles of dogs deprived of the pancreas, the muscular chemism in human and in grave experimental diabetes in dogs can be analyzed. The phosphagen content of the muscles is diminished in human

diabetes from 55.5 to 43.8 per cent, and in experimental diabetes from 61 to 39 per cent. Diabetic hypophosphagenia originates in a diminution of the glycogenic reserve, which induces the formation of phosphagen. Muscular glycogen falls from 676 to 422 mg. per hundred cubic centimeters in diabetic persons and from 555 to 454 in diabetic dogs, as compared with normal persons and with normal dogs. The lactic acid content of the muscles, both in human and in experimental diabetes, varies within normal values. The differences are more accentuated when the calculations are based on the analysis of dry muscular substances. Water in the muscles is diminished in diabetes.

Beiträge zur klinischen Chirurgie, Berlin

159: 447-558 (May 19) 1934

Irritability of Strips of Stomach, Intestine, Gallbladder and Ureter in Healthy and in Diseased State: Contribution to Question of Selectivity of Bacterial Toxins. A. Läwen and H. J. Lauber.—p. 447.
Unusual Abdominal Fistula in Association with Tuberculous Abscess of Ovary. J. Marx.—p. 478.
Treatment of Panaritium of Bone and Joint. G. Liebegott.—p. 484.
Observations on Fatal Cases of Necrosis and Inflammation of Pancreas. F. K. Ewald.—p. 494.
Differential and Early Diagnosis of Primary Sarcoma of Ribs. A. Herzog.—p. 505.
*Elephantiasic Form of Neuropathic Edema. K. Horsch.—p. 515.

Neuropathic Edema.—Horsch reports an unusual form of edema in a woman, aged 27. It developed spontaneously on the back of the left hand and persisted for two years. Three years ago, spontaneous edema appeared on the back of the right hand and lasted three weeks. Seven years ago the patient developed an extensive edema of one of the legs, which persisted for three years. The patient was of a definitely psychopathic hysterical constitution. She exhibited a number of hysterical stigmas and symptoms, such as abnormal mental states, various paralyses and anesthesias. Under the influence of the method of treatment by psychic persuasion in combination with mechanical methods (suspension of the arm), the edema disappeared in the course of three weeks. The author thinks that this is not a pure form of edema which can be placed into one of the known groups. It belongs in all probability to the category of transient neuropathic edemas described by Quincke.

Deutsche medizinische Wochenschrift, Leipzig

60: 967-1002 (June 29) 1934

New Theories on Pathogenesis and Therapy of Angina Pectoris. S. Dietrich and H. Schwiegk.—p. 967.
*Xanthelasma and Icterus: Xanthomatosis with Cirrhosis of Liver. W. Schilling.—p. 972.
*Resorption of Insulin. K. Thiel, A. Ruhnau and A. Unger.—p. 975.
Epidemiology of Whooping Cough. C. Hünermann.—p. 978.
Climatic Cures During Childhood. R. Degkwitz.—p. 979.
Estimation of Diabetes Mellitus Following Accident. H. Stursberg.—p. 981.
Technic of Müller Conglobation Reaction II. H. Ruge.—p. 982.
Sudden Death During Swimming. O. Goebel.—p. 982.

Xanthomatosis with Cirrhosis of Liver.—Schilling emphasizes that xanthelasma with icterus differs in regard to the pathogenesis from the increased cholesterol content of the blood that exists in every obstruction icterus. If the hypercholesterolemia is produced by a chronic obstruction of the discharge of the bile, it disappears immediately after the stasis has been counteracted. However, in the icterus that concurs with xanthomas there is no obstruction that prevents the discharge of the bile, and in these cases the icterus is rather a retention icterus, caused by a change in the hepatic parenchyma. Thus the hypercholesterolemia is continuous in spite of the fact that the icterus may disappear or become reduced. Xanthoma cells, the so-called foam cells, may develop in all organs. The original appearance of these cells may become changed to such an extent that only a fibrogranulomatous scar remains. A knowledge of this transformation is of great importance for the clinician so that he may understand the pathogenesis of the severe organic disturbances that develop in the course of a xanthomatosis. If the xanthomatous changes occur only in the pancreas or liver, the disorder may present for years only the aspects of diabetes or of cirrhosis of the liver. Only an early examination of the blood, which will reveal an accumulation of the cholesterol, will give the clinician an indication of the etiology of the disorder. The author reports the history of a woman he observed for two years. At first she had only a severe icterus and an enlargement of the liver, but in the further course large, flat xanthomas appeared in the face and on the abdomen. The examination of the blood revealed a cholesterol content of 657 mg. per hundred cubic centimeters, 576 mg. of free cholesterol and 81 mg. of ester cholesterol. This shows that the cholesterolemia was caused by a retention of the free cholesterol, for the ester cholesterol showed normal values. Thus it is possible to differentiate two types of cholesterolemia, one in which the free cholesterol is increased and one in which the ester cholesterol is increased. By putting the woman on a diet that was free from animal cholesterols and contained only plant sterols, the cholesterol content of the blood could be gradually reduced, but the patient's general condition showed hardly any change. When the special diet was discontinued, the cholesterol increased again. One particularly painful tumor was removed. The patient died. The author believes that most cases of xanthomatosis are the result of disturbances in the elimination of cholesterol. If the liver is intact in this disease, the cholesterol is retained primarily in the ester form. However, in case of xanthomatous changes in the liver, the esterification of the cholesterol is deficient, just as in parenchymal hepatic changes of different origin.

Method for Retarding Resorption of Insulin.—Thiel and his collaborators report experiments which prove that the resorption of insulin can be retarded by insulin-gelatin mixtures. Suitable mixtures make it possible to prolong the resorption to such an extent that it becomes possible to give such large doses at once that, if they were given in the form of the aqueous solution, they would lead to severe hypoglycemic manifestations. The experiments prove further that it is possible to keep the blood sugar at an almost even level for a number of hours. This can be explained by an even resorption from an insulin depot. They hope this method will eventually make an insulin depot treatment possible and thereby dispense with the repeated daily injections. When the method is introduced into practice, it will be necessary to adjust the diet to the expected decrease in blood sugar; that is, to give the carbohydrates at the time of the maximal decrease. Further improvements will be necessary before the method is suitable for general practice. It is important to overcome the acid reaction of the gelatin and the painfulness of injection. Moreover, it has not been definitely decided as yet whether the best gelatin concentration is 10 per cent or whether a higher percentage will improve the conditions for the resorption of insulin still further.

Klinische Wochenschrift, Berlin

13: 897-936 (June 23) 1934

Colloid Chemical Pathology of Central Nervous System. A. von Braunmühl.—p. 897.
*Convalescent Serum in Treatment of Acute Anterior Poliomyelitis. H. Schlossberger and R. Krumeich.—p. 902.
Dependence of Surface and Depth Actions of Ultrashort Wave Currents on Type of Electrodes and on Their Distance From Skin. A. Gebbert.—p. 905.
Estimation of Efficacy of Therapeutic Experiments. P. Martini.—p. 907.
*Occult Hemorrhage from Stomach or Intestine and Its Clinical Evaluation. L. A. Hulst.—p. 912.
Influence of Soap on Blood Within Vessels. G. Haselhorst and E. Mertens.—p. 914.
*Alizarin in New Test for Gastric Secretion. B. Purjesz.—p. 915.

Convalescent Serum in Treatment of Poliomyelitis.—Schlossberger and Krumeich state that of 227 patients with acute anterior poliomyelitis twenty-six were treated with convalescent serum during the preparalytic stage, while the other 201 received the convalescent serum only after the paralytic symptoms had already developed. Among the twenty-six patients who received the serum during the preparalytic period there was not a single death, twenty-four recovered completely and only two developed paralytic symptoms. Of the 201 patients who received the convalescent serum after the development of the paralytic symptoms, 25 died and 148 showed no changes in the paralytic symptoms following the serum therapy, while in the other 28 the paralytic symptoms showed a more or less pronounced diminution. Since similar ratios

have been reported of poliomyelitic patients who received no treatment, the author is inclined to agree with other physicians who believe that after the paralytic symptoms have once developed the convalescent serum is no longer capable of counteracting them. During the preparalytic stage, however, the convalescent serum is the treatment of choice.

Occult Hemorrhage from Stomach or Intestine.—Hulst states that two factors induced him to study the problem of occult hemorrhages: (1) the report of Boas according to which the stools of patients with carcinoma of the stomach or the intestine contain "occult hemoglobin" more often than do the stools of patients with occult hemorrhages of other origin, and (2) the recent observation that porphyrins occur in the oral cavity and in the bile of every person. The latter factor might become a source of error if blood is searched for in the feces according to Snapper's method, for in this method the porphyrins of the feces are determined by means of the spectroscope and then conclusions are drawn about the presence of occult hemorrhage. After showing that the mere presence of porhyrins in the feces is not sufficient for the determination of a hemorrhage, the author reports the results of tests made on feces of a large number of healthy persons who for a week were put on an exclusive milk and gruel diet, on the feces of thirty-eight patients who had a carcinoma of the stomach or the intestine, and on the feces of thirty-seven patients who had a hemorrhage of a different origin. He resorted to the benzidine test and searched for hematin, deuterohematin, coproporphyrin, deuteroporphyrin and protoporphyrin. He found that the feces of normal persons contain not only coproporphyrin but also frequently protoporphyrin. Among the thirty-eight cancer patients there were only eight in whom deuterohematin was not demonstrable, and in the thirty-seven patients without cancer there was only one who had deuterohematin in the feces. The author concludes that the presence of deuterohematin, particularly if it can be demonstrated several times, is indicative of cancer of the stomach or the intestine. Moreover, he cites factors that make it probable that the "occult hemoglobin" of Boas is identical with deuterohematin.

Alizarin in New Test for Gastric Secretion.—Purjesz points out that recently attempts have been made to devise tests for the secretory activity of the stomach which can dispense with the introduction of a stomach tube. Various organs (lungs, kidneys, liver and intestine) play a part in the maintenance of the acid-base equilibrium, and some investigators have resorted to the determination of the changes in the alveolar carbon dioxide tension as an indirect test for the gastric secretion. The author considers changes in the p_H of the urine, which become manifest after a test breakfast, a more suitable indicator of the gastric secretion than the alveolar carbon dioxide tension. But since difficulties are encountered in the determination of the p_H, it was decided to employ a substance that would indicate the changes by different shades of color. The patients were given a test breakfast of 0.2 Gm. of the sodium salt of alizarin monosulphonate, 15 Gm. of alcohol and 300 Gm. of distilled water, because tests by other investigators had revealed that an increase of the p_H above normal results in shades of red while a reduction below normal results in shades of yellow. In employing the test, the author did not control the degree of concentration by means of standard solutions but determined the p_H in the same patient after an alcohol test breakfast without the alizarin as indicator. The test was made in the following manner: At 8 a. m. the patient had to evacuate the bladder completely. Then he was given the test drink, and in the course of the following three hours urine specimens were collected at thirty minute intervals. The test was performed in patients having various degrees of acidity and it was found that from the intensity of the stain conclusions can be drawn as to the degree of acidity of the stomach. However, the author admits that the amount of mucus in the stomach as well as the specific gravity of the urine influences the color reaction. In persons whose stomach contains large amounts of mucus, the red stain may fail to appear. He is convinced that test breakfasts with suitable indicators (alizarin) are helpful in the estimation of the secretory activity of the stomach.

Medizinische Klinik, Berlin

30: 789-824 (June 15) 1934. Partial Index

Problem of Typhoid Carriers and How to Overcome It. P. Uhlenhuth. —p. 789.
Family Physician and Eugenics. C. M. Janson.—p. 794.
Biophysics of Ultrashort Waves. S. Jellinek.—p. 799.
What Possibilities for Transport of Patients Are Offered by Modern Means of Transportation? Agena.—p. 802.
*Autohemotherapy in Conditions of Depression. G. Giehm.—p. 803.
Meinicke Clarification Reaction II in Cerebrospinal Fluid. F. Weyrauch.—p. 804.

Autohemotherapy in Conditions of Depression.—After calling attention to Hauptmann's attempts at autohemotherapy in conditions of depression, Giehm cites explanations of its action mechanism. Vorschütz states that autohemotherapy results in an increase of globulins, which in turn exert their influence on the autonomic nervous system. The defibrinated blood is supposed to contain a substance that acts as a strong stimulus on the sympathetic. However, there is also the possibility that immunity processes are involved. The author reports his own experiences with autohemotherapy in twenty patients, ten of whom had a reactive depression, four an anxiety melancholia and six a circular depression. The blood was withdrawn from the vein of the arm and was immediately injected into the gluteal muscle. Every second day the patient was given from 3 to 15 cc. of blood. The total number of injections was ten or twelve. Undesirable complications were never observed, but the reaction to the treatment differed considerably. Some patients developed a slight fever; in others the temperature remained the same, while still others experienced a reduction in temperature. The autohemotherapy was combined with quartz lamp irradiations. The patients were given exposures of from three to twenty minutes daily. As a rule the irradiations were given before the injections. Following the description of three cases, the author summarizes the results and reaches the conclusion that autohemotherapy is a valuable addition to the therapeutic armamentarium against psychic disturbances. It is particularly helpful in the treatment of reactive depressions in which physical symptoms predominate. Anxiety melancholias are likewise favorably influenced by it, but in circular depressions its efficacy is negligible.

30: 825-856 (June 22) 1934

General, Practically Important Problems of Nutrition. C. von Noorden. —p. 825.
Apothecary and Pharmaceutical Industry. E. Hesse.—p. 830.
Carbon Dioxide-Oxygen Inhalation in Resuscitation. K. Thiel.—p. 831.
*Circulatory Action of Organic Iodine Compound (3.5 Diiodo-4-Oxyphenylalanine) in Increased Thyroid Action, with Especial Consideration of Electrocardiograms. B. Misske and A. Sylla.—p. 832.
Experimental Investigations on Concentration of Urine in Renal Insufficiency. E. Widrich.—p. 835.
*Treatment of Acute Phosphorus Poisoning. W. Liebscher.—p. 838.
Allergy and Immunity in Tuberculosis. J. Siegl.—p. 839.
*Treatment of Menopausal Neuralgias with Follicular Hormone. G. Pisk. —p. 842.

Organic Iodine Compound in Treatment of Goiter.—Misske and Sylla say that the cardiac symptoms of exophthalmic goiter are generally refractory to the ordinary methods of treatment. Digitalis, for instance, as a rule does not become effective until after a preliminary iodine treatment. Since treatment with inorganic iodine involves certain dangers, an organic compound (3.5 diiodo-4-oxyphenylalanine) has been introduced into the treatment of exophthalmic goiter. This substance acts on the cardiac symptoms of exophthalmic goiter. Electrocardiographic studies during its administration revealed that changes are rare in case of a normal course of excitation. However, the originally strongly increased pulse rate decreases together with the annoying palpitation. The irritability of the sinus node becomes reduced under the influence of the organic compound, but the sinus tachycardia occasionally remains uninfluenced in spite of clinical improvement. The high amplitude of the blood pressure generally decreases. The thyrotoxic disturbances in the cardiac rhythm are especially suitable for treatment with 3.5 diiodo-4-oxyphenylalanine. Auricular fibrillation responds particularly well. In far advanced cases, the rapid and threatening form of fibrillation arrhythmia can often be transformed into the slower, less dangerous form. The administration requires individualization. In patients in whom the basal metabolic rate is increased by more than 60 per cent the authors give three times daily 0.1 Gm. of the organic compound. In those with increases of from 40 to 60 per cent,

0.1 Gm. is given only twice a day, and in those with lesser increases the dose is given only once a day. Medication with the beginning dose may be continued for three weeks. Then, after a pause of four days, somewhat smaller doses are given. The basal metabolic rate should be kept under constant control and the dosage should be adapted to the changes that ensue.

Treatment of Acute Phosphorus Poisoning.—Liebscher says that in phosphorus poisoning the symptoms are not clear during the first few days. There is some vomiting, the vomit eventually being bloody, and some stupor. After three or five days, more serious symptoms become manifest. Jaundice and the signs of acute atrophy of the liver develop. The jaundice is of average gravity, the liver is contracted and sensitive to pressure, and there is spontaneous pain in the liver. The reactions for bile pigments are strongly positive in blood and urine, and leucine and tyrosine may be present in advanced cases. As a result of the accumulation of bile acids in the blood and of the failure of the liver metabolism, severe cerebral manifestations, such as somnolence, loss of consciousness, states of excitation and, finally, coma may develop, in the course of which death may result. A characteristic sign of phosphorus poisoning is fatty degeneration of the liver cells and lack of glycogen. The icterus is apparently hepatic, caused by impairment of the liver cells, and is not purely mechanical, as was assumed formerly. The treatment consists of irrigation of the stomach (even after ten hours), administration of animal charcoal, emetics, purgatives and excitants, and venesection with infusion of sodium chloride solution. However, the administration of fats, oils, milk and similar substances should be avoided on account of the solubility of the phosphorus. The prognosis is as a rule unfavorable, in spite of careful treatment, but the author describes a case in which a gradual improvement was noticeable. In this case a combination of dextrose and insulin and a strict diet proved effective in treating the hepatic disorders, but the symptomatic remedies were not neglected. The case proves that by careful attention to the liver the patient can be carried through the dangerous stage of the acute atrophy of the liver into a subacute stage and finally to recovery.

Treatment of Menopausal Neuralgias.—Pisk found that the various forms of neuralgia (occipital, trigeminal, intercostal and sciatic and polyneuralgia) that develop in women of the menopausal age and are often refractory to the usual antineuralgic treatments may respond to treatment with follicular hormone. At first he administered the hormone by subcutaneous or intramuscular injection, but later he found that the oral administration was likewise effective. He reports his observations in twenty-one cases, of which fourteen were cured and kept free from relapse by a combination of antineuralgic and follicular hormone therapy (up to 2,000 mouse units daily). These cases had not responded to antineuralgic treatment alone.

Wiener klinische Wochenschrift, Vienna

47: 737-768 (June 15) 1934. Partial Index

Biologic Action of Ultraviolet Rays Reflected by Various Surfaces (Snow, Ice, Water, Rocks, Earth and so on). W. Hausmann and F. M. Kuen.—p. 737.
Most Important Requirements of Race Hygiene. H. Reichel.—p. 740.
Female Sex Hormones and Their Clinical Significance. E. Preissecker.—p. 743.
*Disturbance Caused by Syphilitic Stricture of Coronary Ostia. N. H. van Muijden and D. Scherf.—p. 746.
Micromethod for Determination of Double (Difference) Nitrogen. S. Taubes.—p. 750.
*Hypersensitivity to Parenterally Administered Liver Preparations in Case of Pernicious Anemia. G. Grün.—p. 751.

Syphilitic Stricture of Coronary Ostia.—Van Muijden and Scherf point out that it is possible to differentiate various types of angina pectoris. They mention angina pectoris in coronary thrombosis or cardiac infarct, in coronary stenosis (exertion angina pectoris or Heberden's angina pectoris), in endocarditic or syphilitic insufficiency of the aortic valves (usually occurring at night and accompanied by increase in blood pressure), in paroxysmal tachycardia and in severe anemia. All these different types are characterized by special symptoms, so that differentiation is readily possible. Differentiation is important, because the various forms require different treatments and vary in their prognosis. All groups have in common not only the symptom of angina pectoris but also an important pathogenic factor, anoxemia of the cardiac muscle. They differ only in the manner of development of the anoxemia. There is a sixth type of angina pectoris, a form of syphilitic mesaortitis, in which the inflammation of the coronary ostia has produced a severe stricture. In this form, anginous disorders accompanied by anxiety develop after slight exertions. However, attacks of anxiety with crying and restlessness may develop also without pain. Increase in blood pressure is absent in this form of angina pectoris, and even a decrease in blood pressure has been observed. The authors discuss four cases of this type of angina pectoris. The cardiac action is not forceful during the attack. There is tachycardia and a soft, easily suppressible pulse, and the cardiac sounds are not accented. The restlessness and the anxious expectation of new attacks are especially characteristic in this type of patient. Clinical examination reveals nothing that is not also observable in mesaortitis and in syphilitic aortic insufficiency. The electrocardiogram may be normal during rest, but following the slightest exertion the ST interval and the T wave are reduced and may become negative. The administration of nitrites is in general promptly effective in these cases and this differentiates them from coronary thrombosis; and the fact that the attacks develop not only after exertion or excitement but also during rest distinguishes them from classic or ambulatory angina pectoris. The prognosis of the angina pectoris caused by syphilitic stricture of the coronary ostia is unfavorable.

Hypersensitivity to Liver Preparations.—Grün reports a case of hypersensitivity to parenterally administered liver preparations. Desensitization was accomplished by beginning with the injection of small doses and by gradually increasing them. The desensitization was of vital importance for the patient, because all other therapeutic measures failed and his life could not have been saved without the desensitization.

Zeitschrift f. Hygiene und Infektionskr., Berlin

116: 111-224 (May 25) 1934. Partial Index

*Variation Experiments on Bacteria of Paratyphoid Group. H. Habs and L. Seitz.—p. 111.
Formation of Blood Antigens of Dysentery-Shiga Bacteria in Synthetic Nutritive Solutions. M. Eisler and J. Jacobsohn.—p. 119.
Binding of Medical Substances on Spirochetes and Trypanosomes in Vitro. E. Singer, J. Kotrba and V. Fischl.—p. 133.
Production and Behavior of Drug-Resistant Spirochetes of Recurrent Fever. V. Fischl and E. Singer.—p. 138.
Pharyngeal and Nasal Immunity Against Diphtheria in Guinea-Pigs and Monkeys. H. Dold and F. Weigmann.—p. 146.
Monkeys as Carriers of Diphtheria Bacilli. H. Dold and F. Weigmann.—p. 154.
*Action of Human Saliva on Diphtheria Bacilli. H. Dold and F. Weigmann.—p. 158.
Specific Agglutination of Bacteriophages. M. Schlesinger.—p. 171.
*Serologic Studies on Chronic Action of Small Amounts of Carbon Monoxide. P. Hofmann.—p. 177.

Variation Experiments on Paratyphoid Group.—The experiments reported by Habs and Seitz were made to determine whether it is possible to effect in the bacteria of the paratyphoid group a transformation of the serologic structure that corresponds to the transition of one type to another. They employed the technic with which other experimenters had transformed pneumococci. First a rough form is obtained from the normal smooth form. Then a small quantity of the rough form is put into a culture medium that contains large numbers of killed bacteria of a different serologic type. The incubation in test tubes is followed by a transfer to agar plates, and the washed colonies are examined for their serologic structure. Systematic tests were carried out on a nonflagellate strain of the paratyphoid B group, because such a strain makes for the clearest experimental conditions, owing to the lack of flagella (H) antigens. The transformation into a rough form of considerable constancy was accomplished without difficulty. It proved possible to transform the rough form back into a smooth form. The serologic structure of the latter always corresponded to that of the original strain and thus it was merely a reversion into the original smooth form; a transformation into another type was not observed.

Action of Saliva on Diphtheria Bacilli.—Dold and Weigmann studied the salivas of four healthy adults and of three healthy children for their action on genuine and virulent diphtheria bacilli (single culture material). It was found that the saliva of all persons after inactivation (by heating it for thirty minutes to 56 C.) permitted an abundant growth of the

diphtheria bacilli, whereas the fresh saliva exerted a double influence: (1) it inhibited the growth or killed the bacteria; (2) it transformed typical and virulent diphtheria bacilli (single culture material) into diphtheroids and further into pseudodiphtheria bacilli. These actions of the fresh human saliva on genuine virulent diphtheria bacilli differed in intensity in the seven persons. It may therefore be assumed that, if a larger group of persons is examined, some will be found whose saliva produces these effects only slightly or not at all. The authors are of the opinion that these actions of the saliva on diphtheria bacilli are the cause of the pharyngeal and nasal immunity against diphtheria, which they were able to demonstrate in guinea-pigs and monkeys that were susceptible to diphtheria toxin but did not develop symptoms of diphtheria. They believe that the behavior of the saliva toward diphtheria bacilli is at least of equal if not of greater importance than is the antitoxin content of the blood and tissues. This significance of the saliva, however, does not detract from the therapeutic value of diphtheria antitoxin.

Chronic Action of Small Amounts of Carbon Monoxide.—Hofmann points out that, in order to determine whether a chronic carbon monoxide poisoning is possible, numerous studies have been made on the immunity of animals that were under the influence of carbon monoxide. The results, however, were frequently contradictory, for some observers found that animals exposed to carbon monoxide poisoning more readily succumb to an infection, while others observed no disturbance in the mechanism of antibody formation. He made observations on rabbits and dogs that for about nine months inhaled daily for six hours 0.01, 0.03 or 0.09 per cent of carbon monoxide. He found that the rabbits were in good general condition during the entire period of observation. The resistance of the erythrocytes to hypotonic solutions of sodium chloride was unchanged in the dogs as well as in the rabbits. The alexin content of the serum of dogs and rabbits remained uninfluenced. The hemolytic complement in the serum of dogs increased during the first four weeks of exposure to carbon monoxide by from 75 to 100 per cent and remained at this level. An impairment of the formation of normal antibodies was not demonstrable under the influence of prolonged inhalation of carbon monoxide.

Zeitschrift für Tuberkulose, Leipzig

70: 305-384 (June) 1934

Treatment of Lupus and Critical Remarks on Results. C. F. Funk.—p. 305.
*Course of Tuberculosis and Function of Thyroid. O. Schedtler.—p. 314.
*Medicinal Modification of Tuberculotoxic Symptoms During Menstruation. H. Kriech.—p. 319.
Results of and Experiences in Incomplete Pneumothorax Treatment. M. Schlosser.—p. 322.
*Requirements of Efficacy of Phrenic Exeresis. N. F. Bodungen.—p. 324.
Tuberculous Ulcerations of Oral Mucous Membrane. J. Szántó.—p. 330.

Course of Tuberculosis and Function of Thyroid.—In a review of the literature, Schedtler shows that opinions about the significance of the thyroid in tuberculosis differ widely. He summarizes his experiments and clinical observations as follows: 1. In rabbits and guinea-pigs, thyroidectomy seems to weaken the tuberculous infection. In rabbits the reduction in severity seems to be slightly less than that which is produced by castration. 2. Administration of thyroxine produces in guinea-pigs a more rapid course of the experimental tuberculosis. 3. Clinical observations on a larger material give no indication of regular relations between hyperfunction of the thyroid and the origin and course of tuberculosis. 4. Hypothyroid conditions likewise seem to exert no noticeable influence on the course of a tuberculosis. 5. The thyroxine therapy of tuberculosis still lacks reliable foundations.

Tuberculotoxic Symptoms During Menstruation.—Kriech describes an exacerbation in the tuberculotoxic symptoms, particularly an increase in fever, during the menstrual period of patients with certain forms of tuberculosis. He admits that during a normal menstrual cycle the impairments produced by this exacerbation are again repaired during the interval. However, in certain types of tuberculous young women the menstruation becomes profuse and recurs after extremely short intervals, later to be followed by an amenorrhea that has an unfavorable prognosis. If attempts are made to counteract these menstrual disturbances with ovarian preparations, the fever and the general condition of these patients frequently take a turn for the worse. Since various dietary and medicinal treatments likewise failed, the author resorted to a symptomatic therapy and tried to check the severe menorrhea by giving three times a day fifteen drops of ergotamine tartrate. The result of this treatment was that the menstrual flow was reduced, the temperature curve became more regular and the other tuberculous symptoms improved, and with them the general condition.

Phrenic Exeresis.—Bodungen says that phrenicectomy produces irreparable changes and often limits the respiratory resources of the patient. He considers an extensive application of phrenicectomy undesirable. The indications for it have to be evaluated carefully. In some cases phrenicectomy can be performed as the only intervention, in others it may be a complementary operation. Its efficacy is dependent (1) on the reduction in the volume of the thorax, (2) on the relative immobilization following the diaphragmatic paralysis and on the reduction in the mobility of the lower ribs, (3) on the changes in the lymph and blood circulations, and (4) on alterations in the sympathetic nervous system. Phrenicectomy is most promising in cases with a subacute or a chronic course, in which signs of reparation begin to appear, but attention must be given to the size of the cavity as well as to the surrounding pulmonary tissues. If the pulmonary pleura is free from adhesions or if the layers of the pleura are only slightly adherent, the results of phrenicectomy are favorable. For this reason the condition of the pleural sac should be carefully examined. Whenever cavities exist in the lower third of the lung, phrenic exeresis is preferable to artificial pneumothorax. Phrenicectomy is helpful as a complementary operation in cases of incomplete pneumothorax and also when filling of the pneumothorax is discontinued and there is no possibility of unfolding the lung. Phrenic exeresis can be done also for the purpose of retarding the course of a process or to make it less acute in cases in which a therapeutic result can no longer be expected and in which other interventions are not feasible. Phrenic exeresis is contraindicated in case of a cavern above a peripherally attached adhesion of the median lobe. A phrenic exeresis of the right side, previous to a thoracoplasty, prevents the horizontal collapse on account of the elevated position of the liver and should therefore not be performed unless it is absolutely necessary. In the pneumonic, bronchopneumonic and ulceropneumonic forms that take a rapid course, phrenicectomy is likewise contraindicated. The influence exerted by phrenic exeresis on the neighboring organs and on the heart has not been sufficiently explained as yet to permit its definite evaluation.

Zentralblatt für Gynäkologie, Leipzig

58: 1393-1440 (June 16) 1934

*Eclampsia and Paralysis. H. Schwanen.—p. 1394.
Hormone Menstrual Disturbances. H. van der Hoeven.—p. 1405.
Lever Traction with Forceps. K. Holzapfel.—p. 1411.
Rare Position of Legs in Head Presentation. K. Holzapfel.—p. 1413.

Eclampsia and Paralysis.—Schwanen points out that the high incidence of intracranial hemorrhages or of foci of softening in patients with eclampsia stands in marked contrast to the rarity of paralysis in the clinical manifestations of this disease. To determine the causes of this contrast, the author reviewed thirty-four cases from the literature and three of his own. He found the mortality of eclamptic paralysis extraordinarily high and the prognosis of eclamptic paralysis independent of the number of eclamptic attacks. The contrast between the high incidence of an anatomically demonstrable intracranial hemorrhage or softening and the rarity of a clinically demonstrable paralysis in eclampsia is traced to the following causes: 1. The eclampsia, in which apoplexy occurs, is usually so severe that it rapidly leads to coma and death, so that, so to speak, the patient does not live long enough to experience the paralysis. 2. Because of the severity of the eclampsia, the interest of the physician centers on the delivery and the circulation and so, even if a paralysis could be neurologically demonstrable, it would not be detected, because the physician does not give his attention to neurologic disturbances. 3. Eclamptic paralysis, particularly if it occurs without eclamptic attacks, frequently is not ascribed to eclampsia but rather

to embolism, intoxication or other factors. Since eclamptic paralysis is little known as yet, such an erroneous diagnosis is readily possible. The author advises neurologic control of every case of eclampsia and thinks that in this manner it will be possible to detect eclamptic paralysis more often. Eclamptic paralysis is frequently found in eclampsia without convulsions (twenty-one out of thirty-seven cases). It is to be assumed that the apoplexy interrupts the conduction tracts, so that convulsions can no longer be elicited. This explanation appears the more understandable in view of the cases in which eclamptic spasms develop only on the side that is not paralyzed. Convulsions and paralysis are both manifestations of eclampsia.

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*Ureteral Catheterization and Pyelitis of Pregnancy. F. von Mikulicz-Radecki.—p. 1506.
Plastic Repair of Sphincter According to Martius in Urethrovesicovaginal fistula. J. Frigyesi.—p. 1526.
*Transvesical Diaphanoscopy. E. Klaften.—p. 1529.
High Vesicofixation According to Werth-Halban. K. Heyrowsky.—p. 1541.
Complete Vesical Inversion. N. P. Werhatzky.—p. 1543.

Ureteral Catheterization and Pyelitis of Pregnancy.—According to von Mikulicz-Radecki, the concurrence of two factors is considered responsible for the development of pyelitis during pregnancy: (1) the presence of coli bacteria in the renal pelvis, which results in bacteriuria, and (2) urinary stasis. It has been assumed by Stoeckel that, as a result of the toxins of pregnancy, the intestine and the ureters are in a state of atonia, and that because of this the coli bacteria can pass the intestinal wall more readily and enter the renal pelvis by way of the blood stream. The ureteral atonia results in a deficient urinary discharge and in urinary stasis; it favors the multiplication of micro-organisms in the urine, the resorption of toxins and the invasion of micro-organisms into the mucous membrane. It is possible also that the atonic ureter is more readily compressed by the growing uterus. On the basis of these opinions about the pathogenesis, the author stresses the following aims of the treatment: removal of the stasis in the colon and with it the coli invasion by high enemas; destruction of the coli bacteria in the urine by bactericidal substances; removal of the urinary stasis by counteracting the ureteral compression by having the patient lie on the side that is normal, by increasing the urinary stream through the intake of large amounts of fluid, by tonicizing remedies and finally by drainage of the renal pelvis; that is, by ureteral catheterization. The latter procedure, with its possibilities for the drainage of the renal pelvis, for continuous drainage and for irrigation of the renal pelvis, permits not only a more exact diagnosis but also a better treatment of the pyelitis of pregnancy. The author admits that ureteral catheterization does not always accomplish its aim, for it may prove impossible to push the catheter all the way up into the renal pelvis; nevertheless it is effective in many cases. The obstruction is found most frequently in the subrenal ureteral loop, which is developed most noticeably during the second half of pregnancy. The author believes that by its bending this loop becomes the cause of a sudden urinary stasis in the renal pelvis, which in the presence of a bacteriuria leads to pyelitis and in case of sterile urine to a typical pain underneath the kidney.

Transvesical Diaphanoscopy.—The difficulties in the differential diagnosis of intra-abdominal tumors and the observation that during cystoscopy in the darkened room the urinary bladder lights up and is sharply demarcated against its surroundings induced Klaften to utilize this light phenomenon of the bladder. This simple method not only gave information about the contents of cystomas but also revealed the antevesical position of the tumor and the downward placement, the shifting in other directions and the changes in the shape of the urinary bladder as the result of ovarian or other tumors. Further, it permitted the differentiation between ovarian cystomas and ascites and, finally, it revealed the simultaneous presence of ovarian cysts and uterine myomas. The procedure is as follows: The urinary bladder is evacuated and irrigated with a 3 per cent boric acid solution until the fluid becomes clear. Then the bladder is filled with from 250 to 300 cc. of a 3 per cent solution of boric acid and illuminated from within with an ordinary cystoscope. The examination is performed in a completely darkened room so that, with the beak of the instrument directed toward the vertex of the bladder, the organ becomes illuminated. If the abdominal wall is held tense in the region of the bladder, the light effect becomes clearer. It is also important that the patient be not too obese. Out of the total of 720 diaphanoscopic examinations, he cites several in which the growth was permeable for light and became illuminated. Then he describes some in which it was not permeable to light; but in all of these cases the bladder was illuminated. There were some patients in whom the light from the bladder was cut off. Careful studies in these cases revealed that the shutting off of the light of the bladder resulted when a tumor, not permeable for light, prevented the filled bladder from rising above the rim of the symphysis and forced it downward into the small pelvis. Roentgenoscopy reveals the bladder in these cases, to be flattened and extended sideward. The author further describes his efforts to improve the technic of diaphanoscopy. He aimed to improve the light effect by the admixture of various substances to the fluid introduced into the bladder but these efforts failed. He also tried a combination of transvesical and transrectal examination, but this produced no improvement. However, it was observed that air filling of the bladder produced the same light effect in the bladder as did the boric acid solution. The marginal illumination of the bladder was even more intense when air was used. Efforts were made also to increase the intensity of the light, and they succeeded to such an extent that now a cystodiaphanoscope is available which furnishes from four to five times the amount of light as the older instrument. In discussing the mechanism of diaphanoscopy the author points out that it is due to the light reflection of the vesical mucous membrane. A portion of the light permeates the vesical wall and exerts the same effect on the tumor.

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Corneal Disorder of Keratitis Bullosa Type First in One and Later in Other Eye After Cataract Extraction. J. G. Lindberg.—p. 417.
Experiences with Pantocain-L-Lumbar Anesthesia. O. Utter.—p. 428.
*Chylothorax: Case. L. Grönlund.—p. 439.
*Primary Sarcoma of Synovial Membrane of Knee Joint: Case. T. Hohenthal.—p. 458.

Chylothorax.—In this case of effusion of chyle into the left side of the thoracic cavity, recovery without recurrence followed after eight punctures and the removal of 8,340 cc. of chylous fluid. Cancer of the stomach was neither clinically nor roentgenologically demonstrable. Trauma of the left side of the thorax had occurred three and a half years earlier. Although gastric cancer was established one and one-half years later, Grönlund considers the etiology of the case doubtful.

Primary Sarcoma of Synovial Membrane of Knee.—Hohenthal's case in a young man presented a relatively benign course during a long period. Two years after a trauma of the right knee joint a slight tumor appeared at the seat of the injury, gradually growing larger. Two years later metastases were noted in the left upper arm. The following year the anatomopathologic picture indicated undoubted malignity, and resection of the tumor of the knee joint and extirpation of the metastases were performed. Five years after the first symptoms metastases appeared in the right elbow and later in the region of the right shoulder, the left shoulder blade and on the anterior side of the left thigh, also recurrence in the right knee. Extirpation of the various tumors was done twice. Finally, eight years after the beginning of the disturbance, further metastases took place. The disease now progressed more rapidly, the general condition was aggravated, the tumor gradually metastasizing throughout the body, and death followed. Roentgenograms showed slight changes in the patella due to the primary tumor; in the diaphysis of the tibia there was gradually increasing clarification, which suggested a neoplasm infiltrating the bone tissue. The primary tumor, recurrences and metastases in general resembled one another, the histologic picture varying from spindle-cell to round-cell and polymorphous sarcoma. The motility of the knee joint was greatly reduced, the muscles of the leg atrophied. The author reviews the twenty-three cases of primary sarcoma of the synovial membrane of the knee joint reported in the literature. Recurrences were reported in three of these, and metastases in three.